



## B

### B stars

- UF *helium stars*
- GS celestial bodies
  - . stars
  - . . early stars
  - . . . hot stars
  - . . . . **B stars**
  - . . . . . shell stars
  - . . . . . Sigma Orionis
- RT blue stars
- Herbig–Haro objects
- limb brightening
- limb darkening
- peculiar stars
- stellar composition
- Wolf–Rayet stars

### B-1 aircraft

- GS attack aircraft
  - . bomber aircraft
  - . . **B-1 aircraft**
- jet aircraft
  - . **B-1 aircraft**
- North American aircraft
  - . **B-1 aircraft**
- RT  $\infty$  aircraft
- bombing equipment
- bombs (ordnance)
- combat
  - $\infty$  military aircraft
  - multiengine vehicles
  - warfare
- $\infty$  winged vehicles

### B-2 aircraft

- (added September 1992)
- UF *stealth bomber*
- GS attack aircraft
  - . bomber aircraft
  - . . **B-2 aircraft**
- jet aircraft
  - . **B-2 aircraft**
- RT  $\infty$  aircraft
- $\infty$  military aircraft
- X-36 aircraft

### B-26 aircraft

- UF *Invader aircraft*
- GS attack aircraft
  - . bomber aircraft
  - . . **B-26 aircraft**
- Martin aircraft
  - . **B-26 aircraft**
- monoplanes
  - . **B-26 aircraft**
- RT  $\infty$  aircraft

### B-47 aircraft

- UF *RB-47 aircraft*
- Stratojet aircraft*
- XB-47 aircraft*
- GS attack aircraft
  - . bomber aircraft
  - . . **B-47 aircraft**
- Boeing aircraft
  - . **B-47 aircraft**
- jet aircraft
  - . **B-47 aircraft**
- monoplanes
  - . **B-47 aircraft**
- RT  $\infty$  aircraft

### B-50 aircraft

- UF *RB-50 aircraft*

### *superfortress aircraft*

- GS attack aircraft
  - . bomber aircraft
  - . . **B-50 aircraft**
- Boeing aircraft
  - . **B-50 aircraft**
- monoplanes
  - . **B-50 aircraft**
- RT  $\infty$  aircraft

### B-52 aircraft

- UF *Stratofortress aircraft*
- GS attack aircraft
  - . bomber aircraft
  - . . **B-52 aircraft**
- Boeing aircraft
  - . **B-52 aircraft**
- jet aircraft
  - . **B-52 aircraft**
- monoplanes
  - . **B-52 aircraft**
- RT  $\infty$  aircraft
- Pegasus air-launched booster
- turbofan engines

### B-57 aircraft

- UF *Canberra bomber*
- RB-57 aircraft*
- GS attack aircraft
  - . bomber aircraft
  - . . **B-57 aircraft**
- jet aircraft
  - . **B-57 aircraft**
- Martin aircraft
  - . **B-57 aircraft**
- monoplanes
  - . **B-57 aircraft**
- RT  $\infty$  aircraft
- Canberra aircraft

### B-58 aircraft

- UF *Hustler aircraft*
- GS attack aircraft
  - . bomber aircraft
  - . . **B-58 aircraft**
- General Dynamics aircraft
  - . **B-58 aircraft**
- jet aircraft
  - . **B-58 aircraft**
- monoplanes
  - . **B-58 aircraft**
- supersonic aircraft
  - . **B-58 aircraft**
- tailless aircraft
  - . **B-58 aircraft**
- RT  $\infty$  aircraft

### B-66 aircraft

- UF *Destroyer aircraft*
- RB-66 aircraft*
- GS attack aircraft
  - . bomber aircraft
  - . . **B-66 aircraft**
- jet aircraft
  - . **B-66 aircraft**
- McDonnell Douglas aircraft
  - . Douglas aircraft
  - . . **B-66 aircraft**
- monoplanes
  - . **B-66 aircraft**
- RT  $\infty$  aircraft

### B-70 aircraft

- UF *Valkyrie aircraft*

### *XB-70 aircraft*

- GS attack aircraft
  - . bomber aircraft
  - . . **B-70 aircraft**
- jet aircraft
  - . **B-70 aircraft**
- monoplanes
  - . **B-70 aircraft**
- North American aircraft
  - . **B-70 aircraft**
- research vehicles
  - . research aircraft
  - . . **B-70 aircraft**
- supersonic aircraft
  - . **B-70 aircraft**
- RT  $\infty$  aircraft

### B-103 aircraft

- USE **Buccaneer aircraft**

### B-A-W devices

- USE **bulk acoustic wave devices**

### babbitt metal

DEF Any of the white alloys composed primarily of tin or lead and of lesser amounts of antimony, copper, and other metals, and used for bearings.

- GS alloys
  - . antimony alloys
  - . . **babbitt metal**
  - . copper alloys
  - . . **babbitt metal**
  - . tin alloys
  - . . **babbitt metal**
- RT bearing alloys

### baboons

- GS animals
  - . vertebrates
  - . . mammals
  - . . . primates
  - . . . . **baboons**

### BAC 111 aircraft

- GS BAC aircraft
  - . **BAC 111 aircraft**
- jet aircraft
  - . turbofan aircraft
  - . . **BAC 111 aircraft**
- monoplanes
  - . **BAC 111 aircraft**
- passenger aircraft
  - . **BAC 111 aircraft**
- transport aircraft
  - . **BAC 111 aircraft**
- RT  $\infty$  aircraft

### BAC aircraft

- UF *British Aircraft Corp aircraft*
- GS **BAC aircraft**
  - . BAC 111 aircraft
  - . Canberra aircraft
  - . H-126 aircraft
  - . jet provost aircraft
  - . Scimitar aircraft
  - . TSR-2 aircraft
  - . Valiant aircraft
  - . VC-10 aircraft
  - . Viscount aircraft
- RT  $\infty$  aircraft

### BAC TSR 2 aircraft

- USE **TSR-2 aircraft**

**Bacillus**

- SN (RESTRICTED TO MEMBERS OF THE GENUS BACILLUS; DOES NOT INCLUDE GENERAL MORPHOLOGICAL CLASSIFICATIONS)
- GS microorganisms
- . bacteria
  - . . **Bacillus**
  - . . . stearothermophilus

**back injuries**

- GS injuries
- . **back injuries**
- RT whiplash injuries

**backfire**

- RT combustion
- deflagration
- explosions
- fires
- flame deflectors
- flame propagation
- flashback

**backfire antennas**

- DEF Antennas consisting of radiating feeds, reflector elements, and reflecting surfaces such that the antennas function as open resonators, with radiation from the open end of the resonator.
- GS antennas
- . **backfire antennas**
- RT antenna radiation patterns
- dipole antennas
- endfire arrays
- microwave antennas
- radio antennas

**background noise**

- DEF In recording and reproducing, the total system noise independent of whether or not a signal is present. The signal is not to be included as part of the noise. In receivers, the noise in the absence of signal modulation on the carrier.
- RT channel noise
- cosmic noise
- elastic waves
- electromagnetic noise
- ionospheric noise
- ∞ noise
  - noise (sound)
  - noise measurement
  - noise spectra
  - noise threshold
  - ∞ radiation
  - random noise
  - ∞ rays
  - signal to noise ratios
  - squelch circuits

**background radiation**

- RT big bang cosmology
- continuous radiation
- corpuscular radiation
- Cosmic Background Explorer satellite
- cosmic noise
- electromagnetic noise
- extraterrestrial radiation
- high altitude tests
- ionospheric noise
- ∞ radiation
  - relic radiation
  - sky radiation

*backings*

USE **backups**

**backlobes**

DEF Radiation lobes whose axes make angles of approximately 180 degrees with respect

to the axes of the major lobes of the antennas. By extension radiation lobes in the half-space opposed to the direction of peak activity.

- RT antenna design
- antenna radiation patterns
- directional antennas
- ∞ lobes

**backscattering**

- DEF Scattering of radiation in a direction having a component opposite its original direction of propagation.
- GS scattering
- . **backscattering**
- RT differential absorption lidar
- forward scattering
- laser plasma interactions
- microwave signatures
- nuclear scattering
- scatter propagation

*backshores*

USE **beaches**

**backups**

- DEF Items kept available to replace items which fail to perform satisfactorily. Items under development intended to perform the same general functions another item also under development performs. Used for backups.
- UF *backings*
- RT redundant components
- reserves
- welding

**backward differencing**

- DEF A method of solving a parabolic problem for approximating a time derivative in terms of a previous time step.
- RT differential equations
- numerical stability
- problem solving

**backward facing steps**

- DEF A step structure which faces an oncoming flow. Used for rearward facing steps.
- UF *rearward facing steps*
- RT boundary layer flow
- flow geometry
- fluid boundaries
- forward facing steps
- reattached flow
- recirculative fluid flow
- stairsteps
- ∞ steps

**backward wave tubes**

- GS electron tubes
- . vacuum tubes
  - . . microwave tubes
  - . . . traveling wave tubes
  - . . . . **backward wave tubes**
  - . . . . . helitrons
- microwave equipment
- . microwave tubes
  - . . traveling wave tubes
  - . . . **backward wave tubes**
  - . . . . helitrons
- RT beam currents
- electron transfer
- microwave oscillators

**backward waves**

- DEF In traveling wave tubes, waves whose group velocity is opposite to the direction of electron-stream motion.
- RT elastic waves
- electromagnetic radiation

solitary waves

transmission lines

traveling wave tubes

traveling waves

**backwash**

- SN (EXCLUDES PROCESSES OF BACKWASHING)
- UF *sidewash*
- RT boundary layer stability
- downwash
- slipstreams
- Strouhal number
- turbulence
- wakes

**bacteria**

- GS microorganisms
- . **bacteria**
  - . . actinomycetes
  - . . archaeobacteria
  - . . Azotobacter
  - . . Bacillus
  - . . . stearothermophilus
  - . . Clostridium
  - . . . Clostridium botulinum
  - . . Escherichia
  - . . hydrogenomonas
  - . . Klebsiella
  - . . nitrobacter
  - . . pseudomonas
  - . . salmonella
  - . . sarcina
  - . . serratia
  - . . staphylococcus
  - . . streptococcus
  - . . streptomycetes
- RT aerobes
- anaerobes
- bacteriology
- blight
- colonies
- eukaryotes
- gnatobiotics
- invertebrates
- panspermia
- pathogens
- prokaryotes
- saprophytes
- waste treatment

**bacterial diseases**

- SN (EXCLUDES PLANT DISEASES)
- GS diseases
- . infectious diseases
  - . . **bacterial diseases**
  - . . . cholera
  - . . . diphtheria
  - . . . keratitis
  - . . . syphilis
  - . . . tuberculosis
  - . . . typhoid
  - . . . typhus
- RT Clostridium
- conjunctivitis
- dermatitis
- encephalitis
- meningitis
- nephritis
- pneumonia

**bactericides**

- DEF Agents that destroy microorganisms. Also known as germicides. Used for germicides.
- UF *germicides*
- RT antiinfectives and antibacterials
- antiseptics
- chemical sterilization

## bacteriology

ethylene oxide  
fumigation  
sterilization

### bacteriology

GS microbiology  
. **bacteriology**  
RT archaeobacteria  
bacteria  
biochemistry  
∞ biology  
Clostridium botulinum  
colonies  
endotoxins  
gnotobiotics  
vaccines

### bacteriophages

GS microorganisms  
. viruses  
. . **bacteriophages**  
RT interferon

### badlands

DEF Intricately stream-dissected topography, characterized by a very fine drainage network with high drainage densities (77 to 747 miles per square mile) and short steep slopes with narrow interflues. Badlands develop on the surface with little or no vegetative cover, overlying unconsolidated or poorly cemented clays or silts, sometimes with soluble minerals such as gypsum or halite. They may also be induced in humid areas by removal of the vegetative cover through overgrazing, or by air pollution from sulfide smelting. The term was first applied to an area in western South Dakota, which was called "mauvaises terres" by the early French fur traders.

GS land  
. **badlands**  
RT barren land  
topography

### baffles

DEF Plates that regulate the flow of a fluid, e.g., a heat exchanger, boiler flue, or automotive muffler.

RT attenuators  
∞ barriers  
blast deflectors  
conical flow  
damping  
deflectors  
∞ diffusers  
diverters  
dividers  
ducts  
flame deflectors  
liquid sloshing  
louvers  
mixers  
mufflers  
panels  
reflectors  
shielding  
suppressors

### baggage

GS cargo  
. **baggage**  
RT air cargo  
bags  
ground handling

### bags

GS **bags**  
. air bag restraint devices

. gas bags  
RT baggage  
∞ containers  
packages

### Bahamas

GS landforms  
. islands  
. . West Indies  
. . . **Bahamas**  
nations  
. **Bahamas**  
RT Caribbean region

### Bahrain

GS landforms  
. islands  
. . **Bahrain**  
nations  
. **Bahrain**

### bailout

RT air drop operations  
ejection  
ejection injuries  
ejection seats  
ejection training  
escape (abandonment)  
escape systems  
flying ejection seats  
jettison systems  
jettisoning  
parachute descent  
parafoils

### bainite

DEF Metastable microstructure or microstructures resulting from the transformation of austenite at temperatures between those which produce pearlite and martensite.  
RT bainitic steel  
iron alloys  
microstructure  
steels

### bainitic steel

GS alloys  
. iron alloys  
. . steels  
. . . **bainitic steel**  
RT bainite

### Baja California

USE **Lower California (Mexico)**

### bajadas

USE **fans (landforms)**

### Bakelite (trademark)

RT ceramics  
resins  
thermosetting resins

### bakeout

USE **degassing**

### Baker–Nunn camera

GS optical equipment  
. cameras  
. . **Baker–Nunn camera**  
photographic equipment  
. cameras  
. . **Baker–Nunn camera**  
RT astronomical photography  
Schmidt cameras

### baking

SN (EXCLUDES FOOD PROCESSING)  
GS heating

. **baking**  
RT casting  
degassing  
drying  
heat treatment  
ovens  
roasting  
sterilization

### balance

GS **balance**  
. aerodynamic balance  
. heat balance  
. material balance  
. . water balance  
RT compensators  
∞ equilibrium  
∞ mass balance  
mass distribution  
weight indicators

*balance equations*

USE **equations**

*balanced amplifiers*

USE **push–pull amplifiers**

### balancing

RT eccentricity  
∞ equilibrium  
flywheels  
man machine systems  
stabilization

### Baldwin–Lomax turbulence model

(added May 1997)

GS models  
. mathematical models  
. . turbulence models  
. . . **Baldwin–Lomax turbulence model**  
RT computational fluid dynamics  
eddy viscosity  
flow equations  
turbulent boundary layer  
turbulent flow

### ball bearings

GS bearings  
. antifriction bearings  
. . **ball bearings**  
RT balls  
elastohydrodynamics  
needle bearings  
roller bearings  
thrust bearings

### ball lightning

DEF A relatively rare form of lightning, consisting of a reddish, luminous ball, of the order of one foot in diameter, which may move rapidly along solid objects or remain floating in midair. Hissing noises emanate from such balls, and they sometimes explode noisily but may also appear noiselessly.

GS electric current  
. electric discharges  
. . lightning  
. . . **ball lightning**  
RT atmospheric electricity

### ∞ ballast

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)  
RT ballast (mass)  
ballasts (impedances)

**ballast (mass)**

- RT aerodynamic stability
  - ∞ ballast
    - buoyancy
    - counterbalances
    - floating
    - floats
    - hydrodynamics
    - loads (forces)
    - mass distribution
    - stability
    - static loads

**ballasts (impedances)**

DEF Devices that by means of inductance, capacitance, or resistance, singly or in combination, limit the lamp current of fluorescent or mercury lamps to the required value for proper operation, and where necessary provide the required starting voltage and current and, in ballasts for rapid-start lamps provide low-voltage cathode heating.

- RT ∞ ballast
  - capacitors
  - inductors
  - luminaires
  - resistors
  - transformers

**ballistic cameras**

DEF Ground-based cameras using multiple exposures on the same plate to record the trajectories of rockets.

- GS optical equipment
  - . cameras
  - . . **ballistic cameras**
  - photographic equipment
  - . cameras
  - . . **ballistic cameras**
- RT ground support equipment
  - high speed cameras
  - optical tracking
  - rangefinding
  - stroboscopes
  - trajectory measurement

**ballistic missile decoys**

- GS countermeasures
  - . **ballistic missile decoys**
  - decoys
  - . **ballistic missile decoys**
- RT missile defense
  - reentry decoys

**Ballistic Missile Early Warning System**

- UF *BMEWS*
- GS warning systems
  - . early warning systems
  - . . **Ballistic Missile Early Warning System**
- RT air defense
  - military technology
  - radar tracking
- ∞ systems

**ballistic missile submarines**

- GS water vehicles
  - . ships
  - . . submarines
  - . . . **ballistic missile submarines**
  - . underwater vehicles
  - . . submarines
  - . . . **ballistic missile submarines**
- RT fleet ballistic missiles
  - missile launchers
  - mobile missile launchers
  - navy
  - Poseidon missiles

sea launching

**ballistic missiles**

- SN (GUIDED ONLY DURING INITIAL POWERED PHASE)
- DEF Missiles designed to operate primarily in accordance with the laws of ballistics.
- GS missiles
  - . **ballistic missiles**
  - . . field army ballistic missiles
  - . . intercontinental ballistic missiles
  - . . . Atlas ICBM
  - . . . . Atlas D ICBM
  - . . . . Atlas E ICBM
  - . . . . Atlas F ICBM
  - . . . Minuteman ICBM
  - . . . MX missile
  - . . . Titan ICBM
  - . . . . Titan 1 ICBM
  - . . . . Titan 2 ICBM
  - . . intermediate range ballistic missiles
  - . . Blue Streak missile
  - . . Jupiter missile
  - . . . polaris missiles
  - . . . . Polaris A1 missile
  - . . . . Polaris A2 missile
  - . . . . Polaris A3 missile
  - . . Pershing missile
  - . . Poseidon missiles
  - . . short range ballistic missiles
  - . . Skybolt missile
  - . . Subroc missile
  - . . V-2 missile
- RT antimissile missiles
  - Safeguard system
  - surface to surface missiles

**ballistic ranges**

- GS ranges (facilities)
  - . test ranges
  - . . **ballistic ranges**
  - test facilities
  - . test ranges
  - . . **ballistic ranges**
- RT downrange
  - hydroballistics
  - missile ranges

**ballistic trajectories**

- DEF Trajectories followed by a body being acted upon only by gravitational forces and the resistance of the medium through which it passes.
- GS trajectories
  - . **ballistic trajectories**
- RT ascent trajectories
  - ballistics
  - coasting flight
  - descent trajectories
  - downrange
  - free fall
  - impact prediction
  - midcourse trajectories
  - missile trajectories
  - parabolic flight

∞ **ballistic vehicles**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- UF *nonlifting vehicles*
- RT reentry vehicles
  - rocket vehicles
  - test vehicles
- ∞ vehicles
  - weapons

**ballistics**

DEF The science that deals with the motion, behavior and effects of projectiles, especially bullets, aerial bombs, rockets or the like; the science or art of designing and hurling projectiles so as to achieve a desired performance.

- GS **ballistics**
  - . hydroballistics
  - . interior ballistics
  - . terminal ballistics
- RT aerodynamic drag
  - ballistic trajectories
  - gas guns
  - howitzers
  - hypervelocity guns
  - ordnance
  - projectiles
  - propellants
  - trajectories
  - trajectory analysis
  - trajectory measurement

**ballistocardiography**

- GS bioengineering
  - . biometrics
  - . . cardiography
  - . . . **ballistocardiography**
- RT electrocardiography
  - phonocardiography
  - seismocardiography

**balloon flight**

- RT ∞ flight
  - meteorological flight
  - vertical flight

**balloon sounding**

- GS sounding
  - . **balloon sounding**
- RT atmospheric sounding
  - in situ measurement
  - radiosondes
  - superpressure balloons

**balloon-borne instruments**

- GS measuring instruments
  - . **balloon-borne instruments**
- RT airborne equipment
  - balloons
  - high altitude balloons
  - meteorological instruments
  - radiosondes
  - telescopes

**ballooning modes**

- GS modes
  - . **ballooning modes**
- RT magnetohydrodynamic stability
  - plasma control
  - plasma equilibrium
  - tearing modes (plasmas)

**balloons**

- GS expandable structures
  - . inflatable structures
  - . . **balloons**
  - . . . high altitude balloons
  - . . . . jimsphere balloons
  - . . . . skyhook balloons
  - . . . . superpressure balloons
  - . . . meteorological balloons
  - . . . . jimsphere balloons
  - . . . . ROBIN balloons
  - . . . microballoons
  - . . . tethered balloons
- RT ∞ aircraft
  - airships
  - ascent

## balls

balloon-borne instruments  
ballutes  
folding structures  
gas bags  
gondolas  
observation aircraft  
pilotless aircraft  
stratoscope telescopes

### balls

RT ball bearings  
falling spheres  
joints (junctions)  
spheres  
valves

### ballutes

GS brakes (for arresting motion)  
. aerodynamic brakes  
. . **ballutes**  
drag devices  
. aerodynamic brakes  
. . **ballutes**  
expandable structures  
. inflatable structures  
. . **ballutes**  
RT air drop operations  
aircraft brakes  
balloons  
drag chutes  
folding structures  
parachutes

### Balmer series

GS spectra  
. radiation spectra  
. . electromagnetic spectra  
. . . line spectra  
. . . . **Balmer series**  
RT absorption spectra  
atomic spectra  
electron transitions  
emission spectra  
H beta line  
H gamma line  
H lines  
hydrogen

### balsa

RT trees (plants)  
wood

### Baltic sea

GS seas  
. **Baltic sea**  
RT Estonia  
Latvia

### Baltic Shield (Europe)

GS rocks  
. bedrock  
. . **Baltic Shield (Europe)**  
RT Earth resources  
Europe  
Precambrian period

### Banach space

GS algebra  
. vector spaces  
. . **Banach space**  
. . . Hilbert space  
. . . . Sobolev space  
analysis (mathematics)  
. function space  
. . **Banach space**  
. . . Hilbert space  
. . . . Sobolev space  
. functional analysis

. . **Banach space**  
. . . Hilbert space  
. . . . Sobolev space  
RT harmonic analysis  
metric space

### band ratioing

GS image processing  
. **band ratioing**  
RT image enhancement  
multispectral band scanners  
remote sensing  
spectral bands

### band structure of solids

RT Brillouin zones  
conduction bands  
electron transitions  
energy gaps (solid state)  
forbidden bands  
heterojunction devices  
quantum wells

### bandgap

USE **energy gaps (solid state)**

### bandpass filters

DEF Wave filters having a single transmission band; neither of the cut-off frequencies being zero or infinity.  
GS electromagnetic wave filters  
. **bandpass filters**  
. . crystal filters  
. . tracking filters  
RT adaptive filters  
bandstop filters  
bandwidth  
electric filters  
 $\infty$  filters  
FIR filters  
microwave filters  
optical filters  
ultraviolet filters  
vocoders

### $\infty$ bands

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)  
RT absorption spectra  
anchors (fasteners)  
bandwidth  
Bloch band  
broadband  
clamps  
clips  
conduction bands  
edge dislocations  
energy bands  
fasteners  
forbidden bands  
frequencies  
Herzberg bands  
holders  
low frequencies  
narrowband  
photoluminescent bands  
plastic deformation  
ring structures  
Schumann–Runge bands  
sidebands  
spectral bands  
straps  
Swan bands  
Vegard–Kaplan bands

### bandstop filters

DEF Filters that block signals of a specific frequency or a band of frequencies.  
GS electromagnetic wave filters  
. electric filters  
. . **bandstop filters**  
RT adaptive filters  
bandpass filters  
bandwidth  
crystal filters  
 $\infty$  filters  
high pass filters  
low pass filters  
microwave filters  
optical filters  
tracking filters  
waveguide filters

### bandwidth

GS **bandwidth**  
. broadband  
. narrowband  
. spectral line width  
RT bandpass filters  
 $\infty$  bands  
bandstop filters  
broadband amplifiers  
channel capacity  
dynamic characteristics  
frequencies  
frequency ranges  
impedance  
laser windows  
resonant frequencies  
speech baseband compression  
tracking filters  
transfer functions  
width  
windows (intervals)

### bang-bang control

USE **off-on control**

### Bangladesh

UF *East Pakistan*  
GS nations  
. **Bangladesh**  
RT Asia  
India  
Pakistan

### banking flight

USE **turning flight**

### Barany chair

DEF A kind of chair in which a person is revolved to test his susceptibility to vertigo. It is named after the Swedish physician Robert Barany who lived from 1876 to 1936.  
GS seats  
. **Barany chair**  
RT rotating environments  
tolerances (physiology)  
vertigo

### Barbados

GS landforms  
. islands  
. . West Indies  
. . . **Barbados**  
nations  
. **Barbados**  
RT Caribbean region

### barchans

USE **dunes**

*Bardeen approximation*

USE **barrier layers**  
**electrical properties**  
**surface properties**

*Bardeen–Cooper–Schrieffer theory*

USE **BCS theory**

**Barents Sea**

GS seas  
 . **Barents Sea**  
 RT Arctic Ocean  
 U.S.S.R.

**barite**

GS minerals  
 . **barite**  
 sulfur compounds  
 . sulfates  
 . . **barite**

**barium**

GS chemical elements  
 . **barium**  
 . . barium isotopes  
 metals  
 . **barium**  
 . . barium isotopes

**barium alloys**

GS alloys  
 . **barium alloys**

**barium compounds**

GS **barium compounds**  
 . barium ferrates  
 . barium fluorides  
 . barium oxides  
 . barium sulfides  
 . barium titanates  
 . barium zirconates  
 RT  $\infty$  alkaline earth compounds  
 $\infty$  chemical compounds  
 $\infty$  metal compounds

**barium ferrates**

GS barium compounds  
 . **barium ferrates**  
 iron compounds  
 . ferrates  
 . . **barium ferrates**

**barium fluorides**

GS barium compounds  
 . **barium fluorides**  
 halogen compounds  
 . fluorine compounds  
 . . fluorides  
 . . . **barium fluorides**  
 . halides  
 . . fluorides  
 . . . **barium fluorides**  
 . . metal halides  
 . . . **barium fluorides**

**barium ion clouds**

GS clouds (meteorology)  
 . artificial clouds  
 . . chemical clouds  
 . . . **barium ion clouds**  
 RT Earth magnetosphere  
 electric fields  
 geomagnetism  
 lines of force  
 metal ions  
 rocket sounding  
 thermites

**barium isotopes**

GS chemical elements  
 . alkaline earth metals  
 . . **barium isotopes**  
 . barium  
 . . **barium isotopes**  
 . nuclides  
 . . isotopes  
 . . . **barium isotopes**  
 metals  
 . alkaline earth metals  
 . . **barium isotopes**  
 . barium  
 . . **barium isotopes**

**barium oxides**

GS barium compounds  
 . **barium oxides**  
 chalcogenides  
 . oxides  
 . . metal oxides  
 . . . alkaline earth oxides  
 . . . . **barium oxides**  
 RT high temperature superconductors  
 YBCO superconductors

**barium sulfides**

GS barium compounds  
 . **barium sulfides**  
 chalcogenides  
 . sulfides  
 . . inorganic sulfides  
 . . . **barium sulfides**  
 sulfur compounds  
 . sulfides  
 . . inorganic sulfides  
 . . . **barium sulfides**

**barium titanates**

GS barium compounds  
 . **barium titanates**  
 titanium compounds  
 . titanates  
 . . **barium titanates**  
 RT dielectrics  
 ferroelectric materials

**barium zirconates**

GS barium compounds  
 . **barium zirconates**  
 zirconium compounds  
 . zirconates  
 . . **barium zirconates**

**Barkhausen effect**

RT  $\infty$  effects  
 electromagnetic measurement  
 electromagnetism  
 oscillographs

**barley**

GS farm crops  
 . grains (food)  
 . . **barley**  
 plants (botany)  
 . **barley**  
 RT agriculture  
 blight  
 botany  
 crop growth  
 crop vigor  
 $\infty$  crops  
 $\infty$  food  
 irrigation  
 seeds

**baroclinic instability**

DEF Hydrodynamic instability arising from the existence of a meridional temperature gradient (and hence a thermal wind) in an atmosphere in quasigeostrophic equilibrium and possessing static stability.

GS stability  
 . **baroclinic instability**  
 RT atmospheric circulation  
 atmospheric models  
 baroclinic waves  
 baroclinity  
 flow stability  
 geostrophic wind  
 meteorology  
 zonal flow (meteorology)

**baroclinic waves**

GS elastic waves  
 . capillary waves  
 . . gravity waves  
 . . . **baroclinic waves**  
 surface waves  
 . capillary waves  
 . . gravity waves  
 . . . **baroclinic waves**  
 RT baroclinic instability  
 baroclinity  
 barotropic flow  
 cyclones  
 density distribution  
 geostrophic wind  
 radiation pressure  
 stratified flow  
 wave amplification  
 $\infty$  waves  
 zonal flow (meteorology)

**baroclinity**

DEF The state of stratification in a fluid in which surfaces of constant pressure (isobaric) intersect surfaces of constant density (isobaric). The number, per unit area, of isobaric–isobaric solenoids intersecting a given surface is a measure of baroclinity.

RT baroclinic instability  
 baroclinic waves  
 barotropic flow  
 barotropism  
 $\infty$  isobars  
 meteorological solenoids  
 stratified flow

**barometers**

DEF Instruments used to measure atmospheric pressure.

GS measuring instruments  
 . meteorological instruments  
 . . **barometers**  
 . pressure gages  
 . . **barometers**  
 RT altimeters  
 hypsometers  
 manometers  
 pressure measurement  
 vacuum gages

*barometric pressure*

USE **atmospheric pressure**

**baroreceptors**

GS anatomy  
 . sense organs  
 . . **baroreceptors**  
 receptors (physiology)  
 . **baroreceptors**  
 RT pressure  
 proprioceptors

## barotrauma

### barotrauma

- GS injuries
  - . **barotrauma**
- RT decompression sickness
  - diving (underwater)

### barotropic flow

- GS fluid flow
  - . **barotropic flow**
- RT air currents
  - air flow
  - baroclinic waves
  - baroclinity
  - barotropism
  - flow characteristics
  - lee waves
  - planetary waves
  - Rayleigh waves
  - Rossby regimes
  - sea breeze
  - viscous flow
  - wind (meteorology)
  - wind shear

### barotropism

DEF The state of a fluid in which surfaces of constant density (or temperature) are coincident with surfaces of constant pressure; it is the state of zero baroclinity.

- GS **barotropism**
  - . planetary waves
- RT baroclinity
  - barotropic flow
- ∞ isobars

### ∞ barrages

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT artillery fire
  - dams

### barred galaxies

DEF Spiral galaxies whose nuclei are in the shape of bars at the ends of which the spiral arms begin. About one fifth of all spiral galaxies are barred spirals.

- GS celestial bodies
  - . galaxies
  - . . spiral galaxies
  - . . . **barred galaxies**
- RT disk galaxies
  - galactic structure
  - Hubble diagram
  - local group (astronomy)
  - star clusters
  - star distribution
  - stars
  - Virgo galactic cluster

### ∞ barrels

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT barrels (containers)
  - ∞ drums
  - gun launchers

### barrels (containers)

- UF casks
- RT ∞ barrels
  - ∞ containers
  - drums (containers)

### barren land

DEF Rugged or unproductive lands devoid of significant vegetation compared to adjacent areas

because of environmental factors such as adverse climate, poor soil, o, or winds. Used for barrens.

- UF *barrens*
- GS land
  - . **barren land**
- RT arid lands
  - badlands
  - desertification
  - deserts
  - land use
  - Sahara Desert (Africa)
  - sites
  - soils
  - topography

### barrens

- USE **barren land**

### barricades

- USE **barriers**

### barrier injection transit time diodes

- USE **Barritt diodes**

### barrier layers

- UF *Bardeen approximation*
- RT ∞ barriers
  - Barritt diodes
  - interlayers
  - JFET
  - joints (junctions)
  - junction diodes
  - junction transistors
  - ∞ layers
  - MBM junctions
  - nonohmic effect
  - resonant tunneling
  - seals (stoppers)
  - semiconductor devices
  - SIS (semiconductors)
  - surface layers
  - tunnel junctions
  - waterproofing
  - Zener effect

### ∞ barriers

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- DEF Any materials limiting passage through itself of solids, liquids, semisolids, gases, or forms of energy such as ultraviolet light. Used for barricades and obstacles.

- UF *barricades*
  - obstacles*
- RT abort apparatus
  - acoustic velocity
  - arresting gear
  - baffles
  - barrier layers
  - barriers (landforms)
  - Barritt diodes
  - blood-brain barrier
  - bulkheads
  - chains
  - closures
  - constrictions
  - curtains
  - dams
  - dividers
  - electrode film barriers
  - enclosures
  - fences (barriers)
  - gates (openings)
  - guards (shields)
  - MBM junctions
  - safety devices
  - Schottky diodes

- seals (stoppers)
- shielding
- thermal barriers (plasma control)
- vapor barrier clothing
- walls
- wind (meteorology)
- windows (apertures)

### barriers (landforms)

DEF Elongated offshore ridges or masses, usually of sand, rising above the high-tide level, generally extending parallel to, and at some distance from, the shore, and separated from it by some kind of coastal bay. It is built up by the action of waves and currents.

- GS landforms
  - . **barriers (landforms)**
  - . . Outer Banks (NC)
  - . . reefs
- RT ∞ barriers
  - bars (landforms)
  - island arcs

### Barritt diodes

DEF Barrier injection transit time diodes that operate similarly to IMPATT diodes. The operating frequencies are determined by the transit times across the drift. Used for barrier injection transit time diodes.

- UF *barrier injection transit time diodes*
- GS electronic equipment
  - . diodes
  - . . semiconductor diodes
  - . . . **Barritt diodes**
  - . solid state devices
  - . . semiconductor devices
  - . . . **Barritt diodes**
- RT avalanche diodes
  - barrier layers
  - ∞ barriers
    - carrier injection
    - cryosar
    - electric potential
    - injection
    - junction diodes
    - microwave oscillators
    - rectifiers
    - Schottky diodes
    - semiconductor junctions
    - shot noise
    - transit time

### bars

- GS **bars**
  - . elastic bars
  - . prismatic bars
- RT metal plates
  - rods
  - structural members

### bars (landforms)

DEF A generic term for any of various elongate offshore ridges, banks, or mounds of sand, gravel, or other unconsolidated material, submerged at least at high tides, and built up by the action of waves or currents on the water bottom, especially at the mouth of a river or estuary, or at a slight distance from the beach. Bars commonly form obstructions to water navigation.

- UF *tombolos*
- GS landforms
  - . **bars (landforms)**
- RT barriers (landforms)
  - beaches
  - coastal plains
  - lagoons

littoral drift	jet exhaust	<b>basins (containers)</b>
reefs	jet impingement	RT tanks (containers)
<i>barycenter</i>	∞ radiation	
USE <b>center of gravity</b>	rocket exhaust	
<b>baryon resonance</b>	<b>base pressure</b>	<b>baskets</b>
DEF An anomaly found in scattering cross sections indicating the existence of an unstable, excited state of baryon.	DEF In aerodynamics, the pressure exerted on the base, or extreme aft end, of a body, as of a cylindrical or boattailed body or of a blunt-trailing-edge wing, in a fluid flow.	RT ∞ containers
GS resonance	GS pressure	gondolas
. <b>baryon resonance</b>	RT aerodynamic drag	
RT baryons		<b>bastnasite</b>
hyperons		GS carbon compounds
scattering cross sections		. carbonates
		. . <b>bastnasite</b>
		minerals
		. <b>bastnasite</b>
		rare earth compounds
		. cerium compounds
		. . <b>bastnasite</b>
<b>baryons</b>	<b>basements</b>	
GS particles	RT buildings	<b>batch processing</b>
. elementary particles	floors	GS data processing
. . fermions	foundations	. <b>batch processing</b>
. . . <b>baryons</b>		RT computer programming
. . . . hyperons	∞ <b>bases</b>	computer programs
. . . . . xi hyperons	SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)	data processing equipment
. . . . . omega-mesons	RT bases (chemical)	∞ processing
. . . . . rho-mesons	data bases	
. . . . . sigma-mesons	foundations	<b>bathing</b>
. . hadrons	inorganic compounds	GS cleaning
. . . <b>baryons</b>	ion concentration	. washing
. . . . hyperons	lunar bases	. . <b>bathing</b>
. . . . . xi hyperons	space bases	RT cooling
. . . . . omega-mesons	stations	hygiene
. . . . . rho-mesons		waste water
. . . . . sigma-mesons		
RT baryon resonance	<b>bases (chemical)</b>	<b>batholiths</b>
cold neutrons	GS <b>bases (chemical)</b>	GS rock intrusions
dark matter	. adenines	. <b>batholiths</b>
eta-mesons	. alkalies	rocks
fast neutrons	. . lithium hydroxides	. bedrock
gravitinos	. . potassium hydroxides	. . <b>batholiths</b>
kaons	. . sodium hydroxides	RT granite
meson resonance	. alkaloids	igneous rocks
mesons	. . atropine	
muons	. . betaines	
neutrons	. . caffeine	<b>baths</b>
nucleons	. . colchicine	SN (EXCLUDES BATHING)
photoneutrons	. . ergotamine	GS <b>baths</b>
pions	. . hyoscine	. salt baths
protons	. . lysergine	RT dipping
recoil protons	. . morphine	electroplating
solar protons	. . nicotinamide	heat transfer
thermal neutrons	. . nicotine	quenching (cooling)
	. . pilocarpine	∞ soaking
	. . reserpine	submerging
	. . strychnine	water immersion
	. . trotyl compounds	
<b>basalt</b>	. guanines	<b>bathymeters</b>
GS rocks	. piperidine	DEF Instruments that measure the ocean depths and check the topography of the ocean floor. Used for bathymetry.
. igneous rocks	. pyridines	UF <i>bathymetry</i>
. . <b>basalt</b>	. quinoline	GS measuring instruments
RT cones (volcanoes)	. thymidine	. <b>bathymeters</b>
lunar maria	. uracil	RT depth measurement
Mars volcanoes	RT alkalinity	oceanography
regolith	anhydrides	sounding
soils	∞ bases	underwater research laboratories
volcanoes	buffers (chemistry)	
volcanology	pH	<i>bathymetry</i>
<b>base flow</b>	<i>bases (foundations)</i>	USE <b>bathymeters</b>
DEF Fluid flow at the base or extreme aft end of a body.	USE <b>foundations</b>	
GS fluid flow	<b>BASIC (programming language)</b>	<b>bathythermographs</b>
. <b>base flow</b>	GS languages	GS measuring instruments
RT head flow	. programming languages	. temperature measuring instruments
wakes	. . <b>BASIC (programming language)</b>	. . <b>bathythermographs</b>
	RT computer programming	recording instruments
<b>base heating</b>		. <b>bathythermographs</b>
GS heating	<i>basins</i>	RT pressure gradients
. <b>base heating</b>	USE <b>structural basins</b>	temperature gradients
RT afterbodies		
convection		
exhaust nozzles		



## bats

### bats

- GS animals
  - . vertebrates
  - . . mammals
  - . . . **bats**

### batteries

- USE **electric batteries**

### battery chargers

- RT charge efficiency
  - ∞ charging
    - electric batteries
    - pulse charging
    - storage batteries

### battery separators

- USE **separators**

### Bauschinger effect

- RT ∞ effects
  - fatigue (materials)
  - microstructure

### bauxite

DEF A farruginous aluminium hydroxide rock consisting of several minerals. It is the principle source for aluminum.

- RT aluminum oxides
  - minerals
  - rocks

### bay ice

- GS ice
  - . **bay ice**
- RT freezing
  - frost
  - ice formation
  - ice mapping
  - ice reporting
  - lake ice
  - low temperature
  - navigation
  - oceanography
  - sea ice
  - slush
  - water

### Bayard–Alpert ionization gages

DEF Ionization vacuum gages using a tube with an electrode structure designed to minimize x ray induced electron emission from the ion collector.

- GS measuring instruments
  - . pressure gages
  - . . vacuum gages
  - . . . ionization gages
  - . . . . **Bayard–Alpert ionization gages**
  - vacuum apparatus
    - . vacuum gages
    - . . ionization gages
    - . . . **Bayard–Alpert ionization gages**
- RT hot cathodes

### Bayes theorem

- UF *Bayesian statistics*
- GS theorems
  - . **Bayes theorem**
- RT belief networks
  - quality control
  - sampling

### Bayesian belief networks

- USE **belief networks**

### Bayesian statistics

- USE **Bayes theorem**

### bayous

DEF A term variously applied to many local water features in the lower Mississippi River basin and in the Gulf Coast region of the U.S., especially in Louisiana. Its general meaning is a creek of a secondary watercourse that is tributary to another body of water; especially through alluvial lowlands, coastal swamps or river deltas. The origin of the term is from the American French "boyau", "gut"; from the Choctaw "bayuk", "small stream".

- GS landforms
  - . inlets (topography)
  - . . **bayous**
- RT lakes
  - marshlands
  - rivers

### ∞ bays

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT bays (structural units)
  - bays (topographic features)

### bays (structural units)

- RT aircraft compartments
  - airframes
  - ∞ bays
    - compartments
    - fuselages
    - hulls (structures)
    - shells (structural forms)

### bays (topographic features)

DEF Wide, curving open indentations, recesses, or arms of seas or lakes into the land or between two capes or headlands; larger than coves, and usually smaller than, but of the same general character as gulfs. Used for bights and coves.

- UF *bights*
  - coves*
- GS **bays (topographic features)**
  - . Chesapeake Bay (US)
  - . Delaware Bay (US)
  - . Hudson Bay (Canada)
  - . Monterey Bay (CA)
  - . Saginaw Bay (MI)
  - . San Francisco Bay (CA)
  - . San Pablo Bay (CA)
- RT ∞ bays
  - estuaries
  - gulfs
  - inlets (topography)

### BBGKY hierarchy

- GS classifications
  - . hierarchies
  - . . **BBGKY hierarchy**
- RT Bogoliubov theory
  - Boltzmann transport equation
  - equations of state
  - Fourier transformation
  - kinetic equations
  - plasma physics

### BCAS

- USE **Beacon Collision Avoidance System**

### BCC lattices

- USE **body centered cubic lattices**

### BCH codes

- UF *Bose–Chaudhuri–Hocquenghem codes*
- RT binary codes
  - ∞ codes
    - coding
    - computer programming
    - decoders

- decoding
- digital techniques
- error correcting devices
- information theory
- parity
- random errors

### BCS theory

- UF *Bardeen–Cooper–Schrieffer theory*
- RT many body problem
  - superconductivity
  - ∞ theories
    - thermodynamic coupling

### BE A

- USE **Beacon Explorer A**

### BE B

- USE **Explorer 22 satellite**

### BE C

- USE **Explorer 27 satellite**

### BE–3 engine

- GS engines
  - . rocket engines
  - . . retrorocket engines
  - . . . **BE–3 engine**
- RT Athena rocket vehicle
  - Ranger lunar landing vehicles
  - solid propellant rocket engines

### beaches

DEF Stretches of unconsolidated material that constitute gently sloping zones, typically with concave profiles, extending landward from the low–water line to the place where there is a definite change in material or physiographic form. Used for advancing shorelines, backshores, and inshore zones.

- UF *advancing shorelines*
  - backshores*
  - inshore zones*
- RT bars (landforms)
  - coastal currents
  - coastal plains
  - coasts
  - cusps (landforms)
  - dunes
  - lagoons
  - lakes
  - littoral drift
  - marine environments
  - shoals
  - shorelines
  - topography
  - waterfowl

### Beacon Collision Avoidance System

- UF *BCAS*
- GS avoidance
  - . collision avoidance
  - . . **Beacon Collision Avoidance System**
- RT air traffic control
  - aircraft safety
  - midair collisions
  - radio beacons
  - ∞ systems
    - transponders

### Beacon Explorer A

- UF *BE A*
  - S–66 satellite*
- GS artificial satellites
  - . passive satellites
  - . . Beacon satellites
  - . . . **Beacon Explorer A**
  - expandable structures

missile systems

**beam splitters**

DEF Partially reflecting mirrors which permit some incident light to pass through and reflect the remainder.

RT beams (radiation)  
particle accelerators  
particle beams  
scatter plates (optics)

**beam steering**

(added June 1997)

GS steering  
. **beam steering**  
RT antenna radiation patterns  
beam waveguides  
beamforming  
beams (radiation)  
collimation  
laser beams  
steerable antennas

**beam switching**

GS switching  
. **beam switching**  
RT beams (radiation)  
electron optics  
ion engines  
lasers  
magnetic switching  
packet switching

**beam waveguides**

GS waveguides  
. **beam waveguides**  
RT beam steering  
collimators  
photon beams  
plasmaguides  
rectangular waveguides  
wave propagation  
yokes

**beamed power**USE **power beaming****beamforming**

(added September 1992)

UF *beam forming*  
*beamshaping*  
GS collimation  
. **beamforming**  
RT antenna arrays  
antenna radiation patterns  
beam steering  
beams (radiation)  
laser beams  
polarization (waves)  
radar beams

**∞ beams**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)  
RT beams (radiation)  
beams (supports)

**beams (radiation)**

GS **beams (radiation)**  
. gamma ray beams  
. light beams  
. laser beams  
. microbeams  
. particle beams  
. atomic beams  
. electron beams  
. . . relativistic electron beams  
. ion beams

. inflatable structures  
. . inflatable spacecraft  
. . . Beacon satellites  
. . . . **Beacon Explorer A**  
inflatable space structures  
. inflatable spacecraft  
. . Beacon satellites  
. . . **Beacon Explorer A**  
space erectable structures  
. inflatable spacecraft  
. . Beacon satellites  
. . . **Beacon Explorer A**  
RT Delta launch vehicle

**Beacon Explorer B**USE **Explorer 22 satellite****Beacon Explorer C**USE **Explorer 27 satellite****Beacon satellites**

UF *polar ionosphere beacon*  
GS artificial satellites  
. passive satellites  
. . **Beacon satellites**  
. . . Beacon Explorer A  
. . . Explorer 22 satellite  
expandable structures  
. inflatable structures  
. . inflatable spacecraft  
. . . **Beacon satellites**  
. . . . Beacon Explorer A  
. . . . Explorer 22 satellite  
inflatable space structures  
. inflatable spacecraft  
. . **Beacon satellites**  
. . . Beacon Explorer A  
. . . Explorer 22 satellite  
space erectable structures  
. inflatable spacecraft  
. . **Beacon satellites**  
. . . Beacon Explorer A  
. . . Explorer 22 satellite  
RT LOCATES system

**beacons**

DEF Lights, groups of lights, electronic apparatus, or other devices that guide, orient, or warn aircraft, spacecraft, etc. in flight.

GS navigation aids  
. **beacons**  
. . airport beacons  
. . . discrete address beacon system  
. . radar beacons  
. . . discrete address beacon system  
. . radio beacons  
. . . omnidirectional radio ranges  
. . . . self calibrating omnirange  
. . radio direction finders

RT aircraft lights  
buoys  
compasses  
homing  
homing devices  
instrument flight rules  
∞ markers  
position indicators  
projectors  
searchlights  
∞ signals  
solar compasses  
visual signals

**beads**

RT spot welds  
welded joints  
welding

**Beagle aircraft**

RT ∞ aircraft

**beam currents**

DEF Currents incident on specimens by primary particle sources.

GS electric current  
. **beam currents**  
RT backward wave tubes  
Brillouin flow  
∞ currents  
plasma currents

**beam forming**USE **beamforming****beam injection**

DEF The introduction of a particle radiation beam into a plasma or ionized gas for the purpose of diagnostics, plasma control, or the study of beam/plasma interactions.

RT electron beams  
ion beams  
neutral beams  
plasma heating  
plasma-particle interactions  
tokamak devices  
toroidal plasmas

**beam interactions**

DEF A general term for interactions between various types of beams with each other or with plasmas or substances.

RT beams (radiation)  
collision parameters  
high energy interactions  
∞ interactions  
wave-particle interactions

**beam leads**

GS conductors  
. electric conductors  
. . **beam leads**  
. flat conductors  
. . **beam leads**  
RT bonding  
electric connectors  
∞ joining  
microelectronics  
micromodules  
soldered joints

**beam neutralization**

DEF Neutralization that takes place by means of charge exchange with a neutral gas.

RT beams (radiation)  
electron beams  
ion beams  
neutral beams

**beam plasma amplifiers**

GS amplifiers  
. **beam plasma amplifiers**  
RT electron beams  
millimeter waves  
plasma-particle interactions  
plasmas (physics)  
relativistic electron beams

**beam rider guidance**

DEF System for guiding aircraft, spacecraft, or missiles, along a desired path by means of a radar beam, light beam, etc. The center of the beam axis forms a line along which the vehicle senses its location and corrects its course relative to the beam axis.

GS guidance (motion)  
. **beam rider guidance**  
RT missile control

## beams (supports)

- . . neutral beams
  - . . . molecular beams
  - . . . neutron beams
  - . . . neutrino beams
  - . . pion beams
  - . . proton beams
  - . . pencil beams
  - . . phonon beams
  - . . photon beams
  - . . radar beams
  - RT beam interactions
  - beam neutralization
  - beam splitters
  - beam steering
  - beam switching
  - beamforming
  - ∞ beams
  - coherent electromagnetic radiation
  - coherent radiation
  - corpuscular radiation
  - electromagnetic radiation
  - extreme ultraviolet radiation
  - infrared radiation
  - ionizing radiation
  - irradiation
  - light (visible radiation)
  - longitudinal waves
  - monochromatic radiation
  - multibeam antennas
  - plane waves
  - ∞ radiation
  - ∞ rays
  - submillimeter waves
  - ultraviolet radiation
- beams (supports)**
- UF *structural beams*
  - GS structural members
  - . **beams (supports)**
  - . . box beams
  - . . cantilever beams
  - . . curved beams
  - . . I beams
  - . . rectangular beams
  - . . Timoshenko beams
  - RT ∞ beams
  - columns (supports)
  - girders
  - ∞ headers
  - plastic bodies
  - T shape
  - trusses
- beamshaping*
- USE **beamforming**
- ∞ **bearing**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
  - RT bearing (direction)
  - bearings
  - internal combustion engines
- bearing (direction)**
- RT alignment
  - azimuth
  - ∞ bearing
  - ∞ direction
  - direction finding
  - exposure
  - field of view
  - instrument orientation
  - ∞ orientation
  - position (location)
  - sound localization
  - ∞ space orientation

- bearing alloys**
- GS alloys
  - . **bearing alloys**
  - RT aluminum alloys
  - babbitt metal
  - bearings
  - cadmium alloys
  - copper alloys
  - iron alloys
  - lead alloys
  - metal powder
  - silver alloys
  - tin alloys
  - zinc alloys
- bearingless rotors**
- GS airfoils
  - . wings
  - . . rotary wings
  - . . . lifting rotors
  - . . . . **bearingless rotors**
  - rotating bodies
  - . rotors
  - . . rotary wings
  - . . . lifting rotors
  - . . . . **bearingless rotors**
  - RT hinges
  - rigid rotors
- bearings**
- GS **bearings**
  - . antifriction bearings
  - . . ball bearings
  - . . roller bearings
  - . . . needle bearings
  - . . foil bearings
  - . . gas bearings
  - . . journal bearings
  - . . liquid bearings
  - . . magnetic bearings
  - . . thrust bearings
  - RT ∞ bearing
  - bearing alloys
  - boundary lubrication
  - bushings
  - gimbals
  - idlers
  - internal combustion engines
  - lubrication
  - packings (seals)
  - pivots
  - shafts (machine elements)
  - supports
  - suspension systems (vehicles)
  - swivels
  - wheels

- bears**
- GS animals
  - . vertebrates
  - . . mammals
  - . . . **bears**

*beat*

USE **synchronism**

- beat frequencies**
- DEF The frequencies obtained when two simple harmonic quantities of different frequencies  $f_1$  and  $f_2$  are superimposed. The beat frequency equals  $f_1 - f_2$ .
  - GS frequencies
  - . **beat frequencies**
  - RT group velocity
  - intermediate frequency amplifiers
  - Moire effects
  - resonant frequencies
  - standing waves

superheterodyne receivers

- Beaufort Sea (North America)**
- GS seas
  - . **Beaufort Sea (North America)**
  - RT Alaska
  - Arctic Ocean
  - Canada

- bed rest**
- GS rest
  - . **bed rest**
  - RT calcium metabolism
  - clinical medicine
  - head down tilt
  - orthostatic tolerance

- bedding equipment**
- RT ∞ blankets
  - ∞ equipment

- bediasites**
- GS celestial bodies
  - . meteorites
  - . . stony meteorites
  - . . . tektites
  - . . . . **bediasites**
  - RT australites

- bedrock**
- UF *shields (geology)*
  - GS rocks
  - . **bedrock**
  - . . Baltic Shield (Europe)
  - . . batholiths
  - RT Earth resources
  - geology
  - regolith
  - ∞ shelves
  - soils
  - strata
  - stratification
  - stratigraphy
  - tunneling (excavation)

- beds**
- RT beds (process engineering)
  - couches

- beds (geology)**
- UF *lake beds*
  - GS geology
  - . **beds (geology)**
  - . . salt beds
  - landforms
  - . **beds (geology)**
  - . . salt beds
  - RT ocean bottom
  - strata
  - stratigraphy

- beds (process engineering)**
- RT beds
  - chemical reactors
  - extraction
  - filtration
  - fluidized bed processors
  - ion exchanging
  - percolation

- Beech 99 aircraft**
- DEF Light, low-wing aircraft manufactured by Beechcraft.
  - GS Beechcraft aircraft
  - . **Beech 99 aircraft**
  - . . Beechcraft 18 aircraft
  - . . C-33 aircraft
  - . . C-35 aircraft
  - light aircraft

- . **Beech 99 aircraft**
  - . . Beechcraft 18 aircraft
  - . . C-33 aircraft
  - . . C-35 aircraft
- RT  $\infty$  aircraft
  - $\infty$  low wing aircraft
- Beech aircraft*
  - USE **Beechcraft aircraft**
- Beech C-33 aircraft*
  - USE **C-33 aircraft**
- Beech S-35 aircraft*
  - USE **C-35 aircraft**
- Beechcraft 18 aircraft**
  - GS Beechcraft aircraft
    - . Beech 99 aircraft
    - . . **Beechcraft 18 aircraft**
  - general aviation aircraft
  - . **Beechcraft 18 aircraft**
  - light aircraft
  - . Beech 99 aircraft
  - . . **Beechcraft 18 aircraft**
  - monoplanes
  - . **Beechcraft 18 aircraft**
- RT  $\infty$  aircraft
- Beechcraft aircraft**
  - UF *Beech aircraft*
  - GS **Beechcraft aircraft**
    - . Beech 99 aircraft
    - . . Beechcraft 18 aircraft
    - . . C-33 aircraft
    - . . C-35 aircraft
- RT  $\infty$  aircraft
- Beer law**
  - RT absorptivity
  - Bouguer law
  - electromagnetic absorption
  - molecular absorption
- bees**
  - GS animals
    - . invertebrates
    - . . arthropods
    - . . . insects
    - . . . . **bees**
  - RT swarming
- beetles**
  - GS animals
    - . invertebrates
    - . . arthropods
    - . . . insects
    - . . . . Coleoptera
    - . . . . . **beetles**
    - . . . . . tribolia
  - RT infestation
- behavior**
  - DEF The way in which an organism, organ, body, or substance acts in an environment or responds to excitation, as the behavior of steel under stress, or the behavior of an animal in a test.
  - GS **behavior**
    - . deconditioning
    - . human behavior
  - RT conditioning (learning)
  - diagnosis
  - education
  - extroversion
  - learning
  - migration
  - Skinner boxes
- Belarus**
  - (added August 1993)
  - GS nations
  - . **Belarus**
  - RT Europe
- Belfast aircraft*
  - USE **SC-5 aircraft**
- Belgian Congo*
  - USE **Democratic Republic of Congo**
- Belgian space program**
  - (added August 1990)
  - GS programs
    - . space programs
    - . . European space programs
    - . . . **Belgian space program**
  - RT Belgium
- Belgium**
  - GS nations
  - . **Belgium**
  - RT Belgian space program
  - Europe
- belief networks**
  - (added December 1994)
  - DEF Artificial Intelligence technique for computing probabilistic information.
  - UF *Bayesian belief networks*
  - GS networks
  - . **belief networks**
  - RT artificial intelligence
  - Bayes theorem
  - computer techniques
  - expert systems
  - knowledge representation
  - neural nets
  - probability theory
- Belize**
  - UF *British Honduras*
  - GS nations
  - . **Belize**
  - RT Caribbean region
  - Caribbean Sea
  - Central America
- Bell 214A helicopter**
  - DEF Sixteen-seat utility helicopter manufactured by Bell Helicopter.
  - GS Bell aircraft
    - . **Bell 214A helicopter**
  - V/STOL aircraft
  - . rotary wing aircraft
  - . . helicopters
  - . . . **Bell 214A helicopter**
  - RT  $\infty$  aircraft
  - vertical takeoff aircraft
- Bell aircraft**
  - GS **Bell aircraft**
    - . AH-1S helicopter
    - . AH-1W helicopter
    - . AH-63 helicopter
    - . Bell 214A helicopter
    - . OH-4 helicopter
    - . OH-13 helicopter
    - . UH-1 helicopter
    - . V-22 aircraft
    - . X-1 aircraft
    - . X-2 aircraft
    - . X-5 aircraft
    - . X-14 aircraft
    - . X-22 aircraft
    - . XV-3 aircraft
    - . XV-15 aircraft
  - RT  $\infty$  aircraft
- Bellman theory**
  - RT dynamic programming
  - optimization
  - $\infty$  theories
- bellows**
  - SN (EXPANDABLE JOINTS—FOR DEVICES TO MOVE GASES, USE BLOWERS)
  - DEF Mechanical structures with walls like those of an accordion.
  - GS expandable structures
  - . **bellows**
  - RT expulsion bladders
  - joints (junctions)
  - pumps
- bells**
  - RT auditory signals
  - pressure vessels
  - psychoacoustics
  - $\infty$  signals
  - sound generators
  - warning
  - warning systems
- Beltrami flow**
  - GS fluid flow
  - . **Beltrami flow**
  - RT incompressible flow
  - steady flow
  - vorticity
- $\infty$  **belts**
  - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
  - RT asteroid belts
  - cables (ropes)
  - fasteners
  - girdles
  - proton belts
  - pulleys
  - radiation belts
  - regions
  - Rouse belts
  - seat belts
  - terrestrial dust belt
- Benard cells**
  - GS convection
    - . free convection
    - . . Rayleigh-Benard convection
    - . . . **Benard cells**
  - fluid flow
  - . convective flow
  - . . Rayleigh-Benard convection
  - . . . **Benard cells**
  - RT convection currents
  - convection-diffusion equation
  - Rayleigh number
  - solar convection (astronomy)
  - solar granulation
  - stellar convection
- benches*
  - USE **seats**
- bend tests**
  - DEF Ductility tests in which specimens are bent through an arc of known radius and angle.
  - RT bending
  - crack propagation
  - destructive tests
  - flexural strength
  - fracture mechanics
  - fracture strength
  - $\infty$  materials tests
  - $\infty$  tests

## bending

### bending

- GS **bending**
  - . elastic bending
- RT bend tests
  - ∞ bows
    - buckling
    - camber
    - deflection
    - deformation
    - displacement
    - distortion
    - elastic deformation
    - fatigue tests
    - fiber strength
    - flexibility
    - flexing
    - flutter
    - folding
    - heaving
    - modulus of elasticity
    - plastic deformation
    - stiffness
    - structural failure
    - structural strain
    - temperature inversions
    - twisting
    - warpage

### bending diagrams

- GS diagrams
  - . **bending diagrams**
- RT deflection

### bending fatigue

- GS fatigue (materials)
  - . **bending fatigue**
- RT flexural strength
  - metal fatigue
  - S-N diagrams

### bending moments

- GS moments
  - . **bending moments**
- RT loading moments
  - NASTRAN
  - static loads
  - stress analysis
  - structural design criteria
  - torque

### bending strength

- USE **flexural strength**

### bending theory

- RT stress analysis
  - stress intensity factors
- ∞ theories

### bending vibration

- GS vibration
  - . structural vibration
  - . . **bending vibration**
- RT breathing vibration
  - flutter
  - missile vibration
  - panel flutter
  - random vibration
  - self induced vibration

### bends (physiology)

- USE **decompression sickness**

### beneficiation

- RT ∞ absorption
  - adsorption
  - aeration
  - clean fuels
  - comminution

- concentrating
- ∞ conditioning
  - enrichment
  - exploitation
  - extraction
  - filtration
  - flotation
  - foaming
  - isotopic enrichment
  - leaching
- ∞ metallurgy
  - minerals
  - purification
  - refining
- ∞ separation
  - settling
  - size separation
  - sublimation
  - upgrading
  - washing
  - wastes

### Benin

- UF *Dahomey*
- GS nations
  - . **Benin**
- RT Africa

### bentonite

- DEF A soft, plastic, porous , light colored rock composed essentially of clay minerals of the montmorillonite group plus colloidal silica, and produced by divitrification and chemical alteration of a glassy igneous material, usually a tuff or a volcanic ash.
- RT montmorillonite
  - soils
  - water treatment

### benzene

- GS organic compounds
  - . cyclic compounds
  - . . cyclic hydrocarbons
  - . . . **benzene**
  - . hydrocarbons
  - . . cyclic hydrocarbons
  - . . . **benzene**
- RT chlorobenzenes
  - cyclohexane
  - solvent refined coal
  - thiophenes

### benzene poisoning

- GS diseases
  - . toxic diseases
  - . . **benzene poisoning**
  - . toxicity
  - . **benzene poisoning**
- RT hydrocarbon poisoning
  - industrial safety
- ∞ poisoning
  - toxicity and safety hazard
  - toxicology

### benzilic acid

- GS acids
  - . carboxylic acids
  - . . fatty acids
  - . . . **benzilic acid**
- organic compounds
  - . carboxylic acids
  - . . fatty acids
  - . . . **benzilic acid**

### benzoic acid

- GS acids
  - . carboxylic acids
  - . . fatty acids

- . . . **benzoic acid**
- organic compounds
  - . carboxylic acids
  - . . fatty acids
  - . . . **benzoic acid**

### benzoquinone

- USE **quinones**

### Berenice rocket vehicle

- GS rocket vehicles
  - . multistage rocket vehicles
  - . . **Berenice rocket vehicle**
- RT hypersonic reentry
  - solid propellant rocket engines

### Bergman operator

- GS operators (mathematics)
  - . **Bergman operator**

### Bering Sea

- GS seas
  - . **Bering Sea**
- RT Pacific Ocean

### berkelium

- GS chemical elements
  - . actinide series
  - . . transuranium elements
  - . . . **berkelium**
  - . nuclides
  - . . isotopes
  - . . . radioactive isotopes
  - . . . . transuranium elements
  - . . . . . **berkelium**
- metals
  - . actinide series
  - . . transuranium elements
  - . . . **berkelium**

### Bermuda

- GS landforms
  - . islands
  - . . **Bermuda**
- RT Atlantic Ocean

### Bernoulli equation

- USE **Bernoulli theorem**

### Bernoulli theorem

- DEF In aeronautics, a law or theorem stating that in a flow of incompressible fluid the sum of the static pressure and the dynamic pressure along a streamline is constant if gravity and frictional effects are disregarded. It is named for Daniel Bernoulli, a Swiss scientist who lived from 1700 to 1782. Used for Bernoulli equation.

- UF *Bernoulli equation*

- GS theorems

- . **Bernoulli theorem**

- RT conservation equations

- ∞ equations
  - flow equations
  - fluid flow
  - isentropic processes
  - linearization
  - Magnus effect
  - panel method (fluid dynamics)

### Bernstein energy principle

- GS structural analysis
  - . energy methods
  - . . **Bernstein energy principle**
- RT ∞ energy
  - magnetic fields

### beryl

- UF *emerald*
- GS aluminum compounds

. **beryl**  
 . . alexandrite  
 beryllium compounds  
 . **beryl**  
 . . alexandrite  
 minerals  
 . **beryl**  
 . . alexandrite  
 silicon compounds  
 . silicates  
 . . **beryl**  
 . . . alexandrite  
 RT beryllium

**beryllium**  
 GS chemical elements  
 . **beryllium**  
 . . beryllium isotopes  
 . . . beryllium 7  
 . . . beryllium 9  
 . . . beryllium 10  
 metals  
 . **beryllium**  
 . . beryllium isotopes  
 . . . beryllium 7  
 . . . beryllium 9  
 . . . beryllium 10  
 RT beryl  
 moderators

**beryllium 10**  
 GS chemical elements  
 . beryllium  
 . . beryllium isotopes  
 . . . **beryllium 10**  
 . nuclides  
 . . isotopes  
 . . . beryllium isotopes  
 . . . . **beryllium 10**  
 . . . radioactive isotopes  
 . . . . **beryllium 10**  
 metals  
 . beryllium  
 . . beryllium isotopes  
 . . . **beryllium 10**

**beryllium 7**  
 GS chemical elements  
 . beryllium  
 . . beryllium isotopes  
 . . . **beryllium 7**  
 . nuclides  
 . . isotopes  
 . . . beryllium isotopes  
 . . . . **beryllium 7**  
 . . . radioactive isotopes  
 . . . . **beryllium 7**  
 metals  
 . beryllium  
 . . beryllium isotopes  
 . . . **beryllium 7**

**beryllium 9**  
 GS chemical elements  
 . beryllium  
 . . beryllium isotopes  
 . . . **beryllium 9**  
 . nuclides  
 . . isotopes  
 . . . beryllium isotopes  
 . . . . **beryllium 9**  
 . . . radioactive isotopes  
 . . . . **beryllium 9**  
 metals  
 . beryllium  
 . . beryllium isotopes  
 . . . **beryllium 9**

**beryllium alloys**  
 GS alloys  
 . light alloys  
 . . **beryllium alloys**

**beryllium borohydrides**  
 GS beryllium compounds  
 . **beryllium borohydrides**  
 boron compounds  
 . borohydrides  
 . . **beryllium borohydrides**  
 . boron hydrides  
 . . **beryllium borohydrides**  
 hydrogen compounds  
 . hydrides  
 . . borohydrides  
 . . . **beryllium borohydrides**  
 . . boron hydrides  
 . . . **beryllium borohydrides**

**beryllium chlorides**  
 GS beryllium compounds  
 . **beryllium chlorides**  
 halogen compounds  
 . chlorine compounds  
 . . chlorides  
 . . . **beryllium chlorides**  
 . halides  
 . . chlorides  
 . . . **beryllium chlorides**  
 . metal halides  
 . . . **beryllium chlorides**

**beryllium compounds**  
 GS **beryllium compounds**  
 . beryl  
 . . alexandrite  
 . beryllium borohydrides  
 . beryllium chlorides  
 . beryllium fluorides  
 . beryllium hydrides  
 . beryllium nitrides  
 . beryllium oxides  
 . . alexandrite  
 RT  $\infty$  alkaline earth compounds  
 $\infty$  chemical compounds  
 $\infty$  metal compounds  
 metal fuels  
 metal propellants

**beryllium fluorides**  
 GS beryllium compounds  
 . **beryllium fluorides**  
 halogen compounds  
 . fluorine compounds  
 . . fluorides  
 . . . metal fluorides  
 . . . . **beryllium fluorides**  
 . halides  
 . . fluorides  
 . . . metal fluorides  
 . . . . **beryllium fluorides**  
 . metal halides  
 . . metal fluorides  
 . . . **beryllium fluorides**

**beryllium hydrides**  
 GS beryllium compounds  
 . **beryllium hydrides**  
 hydrogen compounds  
 . hydrides  
 . . metal hydrides  
 . . . **beryllium hydrides**

**beryllium isotopes**  
 GS chemical elements  
 . beryllium  
 . . **beryllium isotopes**

. . . beryllium 7  
 . . . beryllium 9  
 . . . beryllium 10  
 . nuclides  
 . . isotopes  
 . . . **beryllium isotopes**  
 . . . . beryllium 7  
 . . . . beryllium 9  
 . . . . beryllium 10  
 metals  
 . beryllium  
 . . **beryllium isotopes**  
 . . . beryllium 7  
 . . . beryllium 9  
 . . . beryllium 10

**beryllium nitrides**  
 GS beryllium compounds  
 . **beryllium nitrides**  
 nitrogen compounds  
 . nitrides  
 . . metal nitrides  
 . . . **beryllium nitrides**

**beryllium oxides**  
 GS beryllium compounds  
 . **beryllium oxides**  
 . . alexandrite  
 chalcogenides  
 . oxides  
 . . metal oxides  
 . . . alkaline earth oxides  
 . . . . **beryllium oxides**  
 . . . . alexandrite

**beryllium poisoning**  
 GS diseases  
 . toxic diseases  
 . . **beryllium poisoning**  
 toxicity  
 . **beryllium poisoning**  
 RT industrial safety  
 $\infty$  poisoning  
 respiratory diseases  
 toxicity and safety hazard  
 toxicology

**BESS (satellite)**  
 DEF A proposed NASA primate biomedical experiment scientific satellite that was never developed. Used for biomedical experiment scientific satellite.  
 UF *Biomedical Experiment Scientific Satellite*  
 GS artificial satellites  
 . **BESS (satellite)**  
 RT multimission modular spacecraft  
 space shuttles

**Bessel functions**  
 GS analysis (mathematics)  
 . complex variables  
 . . **Bessel functions**  
 . . . Hankel functions  
 . real variables  
 . . **Bessel functions**  
 . . . Hankel functions  
 RT boundary value problems  
 differential equations  
 hypergeometric functions  
 orthogonal functions  
 power series

**Bessel–Bredichin theory**  
 RT comets  
 Kohoutek comet  
 radiation pressure  
 $\infty$  theories

## beta factor

### beta factor

DEF In plasma physics, the ratio of the plasma kinetic pressure to the magnetic pressure.

- RT dense plasmas
- fluid pressure
- fusion reactors
- magnetic fields
- magnetic flux
- magnetohydrodynamic stability
- plasma control
- plasma equilibrium
- plasma heating
- plasma physics
- pressure effects
- reactor physics
- tokamak devices
- toroidal plasmas

### beta interactions

USE **weak interactions (field theory)**

### beta particles

DEF Particles emitted in the radioactive decay of many radionuclides. A beta particle is identical to an electron. It has a short range in air and a low ability to penetrate other materials.

- GS ionizing radiation
  - . **beta particles**
- nuclear radiation
  - . **beta particles**
- particles
  - . charged particles
  - . . . energetic particles
  - . . . plasmas (physics)
  - . . . . **beta particles**
- . corpuscular radiation
- . . electron radiation
- . . . **beta particles**
- . . . energetic particles
- . . . plasmas (physics)
- . . . . **beta particles**
- . elementary particles
- . . **beta particles**
- . nuclear particles
- . . **beta particles**

- RT decay
- electron beams
- electrons
- flux (rate)
- hot atoms
- N electrons
- relativistic electron beams
- weak energy interactions

### betaines

- GS bases (chemical)
  - . alkaloids
  - . . **betaines**
- nitrogen compounds
- . alkaloids
- . . **betaines**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . alkaloids
- . . . . **betaines**

### betatrons

DEF Particle accelerators in which magnetic induction is used to accelerate electrons.

- GS particle accelerators
  - . cyclic accelerators
  - . . **betatrons**
  - . electron accelerators
  - . . **betatrons**
- RT microtrons
- synchrotrons

### Bethe–Heitler formula

- GS mathematical logic
  - . formulas (mathematics)
  - . . **Bethe–Heitler formula**

### Bethe–Salpeter equation

- GS analysis (mathematics)
  - . real variables
  - . . **Bethe–Salpeter equation**
- RT differential equations
  - ∞ equations
  - equations of motion
  - kinetic equations
  - quantum mechanics

### bevatron

- GS particle accelerators
  - . cyclic accelerators
  - . . synchrotrons
  - . . . **bevatron**
- RT synchrocyclotrons

### beverages

- GS liquids
  - . potable liquids
  - . . **beverages**
  - . . . wines
- RT coffee
- drinking
  - ∞ food
  - milk

### BGK model

- (added September 1993)
- UF *Bhatnagar–Grass–Krook model*
- GS models
  - . mathematical models
  - . . **BGK model**
- RT Boltzmann transport equation
- computational fluid dynamics
- kinetic equations
- kinetic theory
- Knudsen flow
- molecular collisions
- molecular flow
- particle collisions
- rarefied gas dynamics

### Bhatnagar–Grass–Krook model

USE **BGK model**

### Bhutan

- GS nations
  - . **Bhutan**
- RT Himalayas
- India
- Sikkim
- Tibet

### Bi–Sr–Ca–Cu–O superconductors

USE **BSCCO superconductors**

### bias

DEF A constant or systematic error as opposed to a random error. It manifests itself as a persistent positive or negative deviation of the method average from the accepted reference value.

- GS **bias**
  - . response bias
- RT compensators
- displacement
- electric potential
- errors
- instrument errors
- open circuit voltage
- tube grids

### bibliographies

- GS documents
  - . **bibliographies**
- RT abstracts
- biography
- documentation
- general overviews
- handbooks
- indexes (documentation)
- information dissemination
- information retrieval
- libraries
- literature
  - ∞ reference systems
  - space glossaries
  - summaries

### bicarbonates

USE **carbonates**

### bicrystals

- GS crystals
  - . **bicrystals**
- RT polycrystals
- single crystals

### ∞ bicycle

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT landing gear
- surface vehicles

### bidirectional reflectance

- GS electromagnetic properties
  - . optical properties
  - . . reflectance
  - . . . **bidirectional reflectance**
- RT light scattering
- reflection
- spectral reflectance
- surface properties

### bifurcation (biology)

DEF The separation or branching into two parts, areas, aspects or connected segments, of anatomical systems or functions.

- RT anatomy
- arteries
- ∞ biology
- blood vessels
- branching (physics)
- veins

### bifurcation (mathematics)

USE **branching (mathematics)**

### big bang cosmology

- GS cosmology
  - . **big bang cosmology**
- RT astronomical models
- background radiation
- cosmic rays
- galactic evolution
- gamma ray bursts
- grand unified theory
- gravitational constant
- relativity
- relic radiation
- universe

### Bighorn Mountains (MT–WY)

- GS landforms
  - . mountains
  - . . **Bighorn Mountains (MT–WY)**
- RT Montana
- Wyoming

bights

USE **bays (topographic features)****biharmonic equations**

- GS analysis (mathematics)
  - . real variables
  - . . differential equations
  - . . . partial differential equations
  - . . . . **biharmonic equations**
- RT elastic properties
- ∞ equations

**billets**

- RT casting
  - castings
  - forging
  - ingots
  - metal plates
  - metal strips
  - rods
  - slabs
  - wire

**bimetals**

- RT alloying
  - alloys
  - composite materials
  - functionally gradient materials
  - metal bonding
  - metals

**bimetric theories**

- DEF Theories of gravitation.
- RT gravitation theory
  - metric space
  - Schwarzschild metric
- ∞ theories

**binary alloys**

- GS alloys
  - . **binary alloys**
  - binary systems (materials)
  - . **binary alloys**
- RT alloying
  - cluster variation method

**binary codes**

- DEF Codes composed of a combination of entities each of which can assume one of two possible states. Each entity must be identifiable in time or space.
- RT BCH codes
  - bit error rate
- ∞ codes
  - concatenated codes
  - digital systems
  - trellis coding

**binary data**

- RT analog data
  - bit error rate
  - bubble memory devices
- ∞ data
  - data processing
  - decimal to binary converters
  - digital data

**binary digits**

- GS symbols
  - . alphanumeric characters
  - . . digits
  - . . . **binary digits**
- RT bit error rate
  - bits
  - digital electronics
  - digital systems

**binary fluids**

- GS binary systems (materials)

. binary mixtures

. . **binary fluids**  
mixtures. binary mixtures  
. . **binary fluids**

- RT ∞ fluids
  - gas mixtures
  - kinetic theory
  - Lennard–Jones gas
  - transport properties

**binary integration**

- GS analysis (mathematics)
  - . real variables
  - . . measure and integration
  - . . . **binary integration**
- RT adding circuits
  - digital integrators

**binary mixtures**

- GS binary systems (materials)
  - . **binary mixtures**
  - . . binary fluids
  - . . eutectics
  - . . . eutectic alloys
  - mixtures
  - . **binary mixtures**
  - . . binary fluids
  - . . eutectics
  - . . . eutectic alloys
- RT azeotropes
  - gas mixtures
  - liquid–gas mixtures

**binary phase shift keying**

- (added February 1992)
- UF *biphase shift keying*  
*BPSK*
- GS coding
  - . signal encoding
  - . . phase modulation
  - . . . phase shift keying
  - . . . . **binary phase shift keying**
  - keying
    - . phase shift keying
    - . . **binary phase shift keying**
  - modulation
  - . phase modulation
  - . . phase shift keying
  - . . . **binary phase shift keying**
- RT quadrature phase shift keying
  - satellite transmission

**binary stars**

- DEF Systems of two stars revolving about a barycenter.
- GS celestial bodies
  - . stars
  - . . double stars
  - . . . **binary stars**
  - . . . . cataclysmic variables
  - . . . . companion stars
  - . . . . . Nemesis (star)
  - . . . . eclipsing binary stars
  - . . . . . dwarf novae
  - . . . . . Lambda Tauri stars
  - . . . . . Zeta Aurigae star
  - . . . . Sigma Orionis
  - . . . . symbiotic stars
  - . . . . x ray binaries
- RT accretion disks
  - gravitational binding energy
  - limb darkening
  - star clusters
  - stellar parallax
  - stellar systems
  - triple stars

two body problem

variable stars

*binary summators*USE **adding circuits***binary systems (digital)*USE **digital systems****binary systems (materials)**

- UF *two phase systems*
- GS **binary systems (materials)**
  - . binary alloys
  - . binary mixtures
  - . . binary fluids
  - . . eutectics
  - . . . eutectic alloys
- RT alloys
  - ∞ materials
    - phase diagrams
    - phase separation (materials)
    - solidus
  - ∞ systems
    - ternary systems

**binary to decimal converters**

- GS data converters
  - . **binary to decimal converters**
- RT computer components
  - ∞ converters
    - data processing
    - decimal to binary converters

**binaural hearing**

- GS hearing
  - . **binaural hearing**
  - perception
  - . **binaural hearing**
- RT auditory perception
  - sound localization
  - Weber test

*binders (adhesives)*USE **adhesives****binders (materials)**

- GS **binders (materials)**
  - . propellant binders
  - . . solid rocket binders
- RT additives
  - adhesives
  - cements
- ∞ materials
  - molding materials
  - oxetane polymers
  - sizing materials
  - solid lubricants

**binding**

- RT binding energy
  - bonding
  - collating
  - folding
- ∞ joining
  - printing
  - sealing
  - sewing

**binding energy**

(added May 1995)

- GS **binding energy**
  - . gravitational binding energy
  - . nuclear binding energy
- RT activation energy
  - binding
  - chemical bonds
  - electrostatic bonding
- ∞ energy
  - quantum wells



## binocular vision

vacancies (crystal defects)

### binocular vision

- GS vision
  - . **binocular vision**
- RT haploscopes
  - motion perception
  - space perception
  - stereoscopic vision

### binoculars

- GS optical equipment
  - . **binoculars**
- RT eyepieces
  - microscopes
  - periscopes
  - telescopes

### binomial coefficients

- GS analysis (mathematics)
  - . combinatorial analysis
  - . . **binomial coefficients**
  - coefficients
  - . **binomial coefficients**
- RT factorials

### binomial theorem

- GS algebra
  - . **binomial theorem**
  - theorems
  - . **binomial theorem**
- RT binomials
  - probability density functions
  - probability theory
  - statistical analysis
  - statistical distributions

### binomials

- GS algebra
  - . polynomials
  - . . **binomials**
- RT binomial theorem

### bioacoustics

- GS acoustics
  - . **bioacoustics**
- RT acoustic attenuation
  - auditory defects
  - auditory sensation areas
  - bioengineering
- ∞ biology
  - psychoacoustics
- ∞ science
  - sound intensity

### bioassay

DEF A standardized procedure for the determination of the effects of an environmental variable or substance on living organisms. Used for biological analysis.

- UF *biological analysis*
- RT biochemistry
  - biological diversity
  - biological effects
- ∞ biology
  - histochemical analysis

### Bioastronautical Orbital Space System

- GS programs
  - . NASA programs
  - . . NASA space programs
  - . . . **Bioastronautical Orbital Space System**
  - space programs
  - . . NASA space programs
  - . . . **Bioastronautical Orbital Space System**
- RT ∞ systems

### bioastronautics

DEF The study of biological, behavioral, and medical problems pertaining to astronautics. This includes systems functioning in the environments expected to be found in space, vehicles designed to travel in space, and the conditions on terrestrial bodies other than the Earth.

- RT aerospace environments
  - aerospace medicine
- ∞ astronautics
  - bioengineering
- ∞ biology
  - Biosatellite 1
  - Biosatellite 2
  - Biosatellite 3
  - closed ecological systems
  - Columbus space station
  - Earth atmosphere
  - exobiology
  - head down tilt
  - lunar environment
  - planetary environments
- ∞ science
  - space adaptation syndrome
  - space exploration
  - space flight
  - space stations
  - spacecraft environments

### biochemical fuel cells

- GS electric generators
  - . direct power generators
  - . . fuel cells
  - . . . **biochemical fuel cells**
  - electrochemical cells
  - . fuel cells
  - . . **biochemical fuel cells**
- RT ∞ biology
  - phosphoric acid fuel cells
  - regenerative fuel cells

### biochemical oxygen demand

DEF The amount of oxygen necessary for the oxidative decomposition of a material by microorganisms. The amount of oxygen consumed in mg/1 of water (or waste water) over a period of 5 days at 20 deg. C under laboratory conditions. Used for BOD.

- UF *BOD*
- RT algae
  - ∞ biology
    - ecology
    - oximetry
    - oxygen consumption
    - plants (botany)
    - pollution control
    - water pollution
    - water treatment

### biochemistry

DEF Chemistry dealing with the chemical processes and compounds of living organisms.

- GS **biochemistry**
  - . biogeochemistry
  - . enzymology
  - . physiochemistry
- RT bacteriology
  - bioassay
  - biodegradation
  - bioengineering
- ∞ biology
  - chemical warfare
- ∞ chemistry
  - cytology
  - Gaia hypothesis
  - genetic engineering
  - histochemical analysis

immunoassay  
interferon  
marine chemistry  
metabolites  
molecular biology  
mutagens  
nitrogen metabolism  
nutrition  
optical activity  
organic chemistry  
radioimmunoassay  
vegetation growth

### bioclimatology

USE **biometeorology**

### biocompatibility

DEF Compatibility of substances with living tissues and blood components.

- GS compatibility
  - . **biocompatibility**
- RT antibodies
  - antigens
- ∞ biology
  - blood
  - immunology
  - leukocytes
  - physiological defenses
  - vaccines

### biocontrol systems

- SN (RESTRICTED TO ARTIFICIAL BIOTECHNOLOGICAL SYSTEMS FOR THE CONTROL OF BIOLOGICAL PROCESSES—USE REGULATORY MECHANISMS (BIOLOGY) FOR NATURAL PHYSIOLOGICAL REGULATION)
- RT biofeedback
  - ∞ biology
    - bionics
    - psychomotor performance
    - regulatory mechanisms (biology)
  - ∞ systems
    - tolerances (physiology)

### bioconversion

DEF The transformation of algae and/or other biomass materials in successive stages to aliphatic organic acids to aliphatic hydrocarbons to diesel and/or other liquid fuels.

- RT algae
  - ∞ biology
    - biomass energy production
    - bioprocessing
  - ∞ conversion
    - enzyme activity
    - fermentation
    - fuels
    - hydrocarbon fuel production
    - methane
    - solar heating
    - vegetation

### biodegradability

DEF The characteristic of a substance that can be decomposed by microorganisms.

- GS dissociation
  - . **biodegradability**
- RT ∞ biology
  - decay
  - decomposition
  - deterioration
  - organic materials
- ∞ properties

### biodegradation

- GS degradation
  - . **biodegradation**
- RT activated sludge

biochemistry  
 ∞ biology  
 decay  
 decomposition  
 deterioration  
*biodiversity*  
 USE **biological diversity**  
**biodynamics**  
 DEF The study of the effects of dynamic processes (motion, acceleration, weightlessness, etc.) on living organisms. Used for biomechanics.  
 UF *biomechanics*  
 RT anatomy  
 bioengineering  
 biological models (mathematics)  
 ∞ biology  
 biophysics  
 ∞ dynamics  
 ∞ science  
 stress (physiology)  
**bioelectric potential**  
 GS potential energy  
 . electric potential  
 . . **bioelectric potential**  
 RT bioelectricity  
 ∞ biology  
**bioelectricity**  
 UF *neuron transmission*  
 RT bioelectric potential  
 ∞ biology  
 biomagnetism  
 information processing (biology)  
 neuromuscular transmission  
 spike potentials  
**bioengineering**  
 GS **bioengineering**  
 . bioinstrumentation  
 . . biotelemetry  
 . . implanted electrodes (biology)  
 . biometrics  
 . . body measurement (biology)  
 . . . anthropometry  
 . . . electroplethysmography  
 . . . cardiology  
 . . . ballistocardiography  
 . . . electrocardiography  
 . . . magnetocardiography  
 . . . phonocardiography  
 . . . echocardiography  
 . . . seismocardiography  
 . . . vectorcardiography  
 . . . echoencephalography  
 . . . electroencephalography  
 . . . electromyography  
 . . . electronystagmography  
 . . . electroretinography  
 . . . plethysmography  
 . . . . electroplethysmography  
 . . . radiocardiography  
 RT bioacoustics  
 bioastronautics  
 biochemistry  
 biodynamics  
 ∞ biology  
 bionics  
 biopaks  
 biophysics  
 bone mineral content  
 ∞ engineering  
 genetic engineering  
 human factors engineering  
 underwater breathing apparatus  
 voice control

**biofeedback**  
 DEF Originally confined to the presenting of a subject with sensory information about ongoing physiological activities, it now includes the controlling of specific physiological activities through trained mental effort.  
 GS feedback  
 . **biofeedback**  
 . . sensory feedback  
 RT aerospace medicine  
 biocontrol systems  
 blood pressure  
 conditioning (learning)  
 ∞ control  
 feedback control  
 heart rate  
 human factors engineering  
 psychology  
**bioflavonoids**  
 UF *vitamin P*  
 GS organic compounds  
 . cyclic compounds  
 . . heterocyclic compounds  
 . . . **bioflavonoids**  
 vitamins  
 . **bioflavonoids**  
 RT drugs  
*biogenesis*  
 USE **biological evolution**  
**biogeny**  
 RT ∞ biology  
 ∞ evolution  
 ontogeny  
**biogeochemistry**  
 GS biochemistry  
 . **biogeochemistry**  
 environmental chemistry  
 . geochemistry  
 . . **biogeochemistry**  
 RT ∞ biology  
 botany  
 ∞ chemistry  
 geobotany  
 International Geosphere–Biosphere  
 program  
 minerals  
 plants (botany)  
**biography**  
 GS literature  
 . **biography**  
 RT awards  
 bibliographies  
 case histories  
 documentation  
**bioinstrumentation**  
 UF *biosensors*  
 GS bioengineering  
 . **bioinstrumentation**  
 . . biotelemetry  
 . . implanted electrodes (biology)  
 RT ∞ biology  
 biometrics  
 bionics  
 echoencephalography  
 ∞ engineering  
 IMBLMS  
 ∞ instruments  
 magnetocardiography  
 measuring instruments  
 respirometers  
 ∞ sensors  
 sphymography

wildlife radiolocation  
*biological activity*  
 USE **activity (biology)**  
*biological analysis*  
 USE **bioassay**  
*biological cells*  
 USE **cells (biology)**  
*biological clocks*  
 USE **rhythm (biology)**  
**biological diversity**  
 (added June 1995)  
 DEF The diversity of genes, species, and ecosystems that make up the variety and variability of life.  
 UF *biodiversity*  
*genetic diversity*  
 RT bioassay  
 biological evolution  
 biosynthesis  
 cytology  
 deforestation  
 differentiation (biology)  
 gene expression  
 genetics  
 mutations  
 protobiology  
 species diffusion  
**biological effects**  
 GS **biological effects**  
 . desynchronization (biology)  
 . jet lag  
 . relative biological effectiveness (RBE)  
 RT activity (biology)  
 atrophy  
 bioassay  
 ∞ biology  
 biomedical data  
 bone demineralization  
 Bragg curve  
 chemical effects  
 disorientation  
 dosage  
 ∞ effects  
 flight stress (biology)  
 human reactions  
 Orbiting Frog Otolith  
 pathological effects  
 physiological effects  
 psychological effects  
 radiation dosage  
 radiation effects  
 space adaptation syndrome  
 temperature  
 thermal pollution  
**biological evolution**  
 UF *biogenesis*  
 GS evolution (development)  
 . **biological evolution**  
 . . abiogenesis  
 RT archaeobacteria  
 biological diversity  
 ∞ biology  
 chemical evolution  
 eukaryotes  
 Gaia hypothesis  
 gene expression  
 genetics  
 life sciences  
 mutagens  
 mutations  
 panspermia

## biological models (mathematics)

prokaryotes  
protein synthesis  
protobiology

*biological models*

USE **bionics**

### biological models (mathematics)

DEF Mathematical models for living systems.

GS models

. mathematical models

. . **biological models (mathematics)**

RT biodynamics

∞ biology

bionics

digital simulation

dynamic models

*biological rhythm*

USE **rhythm (biology)**

∞ **biology**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT activation (biology)

activity (biology)

activity cycles (biology)

aerobiology

aerospace medicine

aging (biology)

agriculture

anatomy

animals

bacteriology

bifurcation (biology)

bioacoustics

bioassay

bioastronautics

biochemical fuel cells

biochemical oxygen demand

biochemistry

biocompatibility

biocontrol systems

bioconversion

biodegradability

biodegradation

biodynamics

bioelectric potential

bioelectricity

bioengineering

biogeny

biogeochemistry

bioinstrumentation

biological effects

biological evolution

biological models (mathematics)

bioluminescence

biomagnetism

biomass

biomass energy production

biomedical data

biometeorology

biometrics

bionics

biophysics

bioreactors

biosatellites

biosphere

biosynthesis

biotechnology

biotelemetry

body composition (biology)

body measurement (biology)

body size (biology)

body volume (biology)

bone demineralization

bone mineral content

botany  
carbon cycle  
cells (biology)  
complement (biology)  
cytogenesis  
cytology  
differentiation (biology)  
ecology  
embryology  
evolution (development)  
exobiology  
fatigue (biology)  
flight stress (biology)  
genetic engineering  
genetics  
habitats  
immunology  
implanted electrodes (biology)  
interferon  
life sciences  
marine biology  
medical science  
microbiology  
molecular biology  
morphology  
nitrogen metabolism  
paleobiology  
protobiology  
radiobiology  
relative biological effectiveness (RBE)  
reproduction (biology)  
rhythm (biology)  
∞ science  
skin temperature (biology)  
tissues (biology)  
veterinary medicine

### bioluminescence

GS emission

. light emission

. . luminescence

. . . **bioluminescence**

RT ∞ biology

phosphorescence

### biomagnetism

DEF Magnetic fields surrounding parts or the whole of a living biological system; also, the effects of magnetism on parts or the whole of a biological entity.

GS magnetic fields

. **biomagnetism**

magnetic properties

. **biomagnetism**

RT bioelectricity

∞ biology

biophysics

electromagnetic fields

electromagnetic interactions

radiobiology

### biomass

DEF The dry weight of living matter in a given area expressed in terms of mass or weight per unit of volume or area.

GS weight (mass)

. **biomass**

RT animals

∞ biology

carbon cycle

∞ density

organisms

plants (botany)

populations

silviculture

∞ weight

### biomass energy production

GS energy conversion

. **biomass energy production**

RT bioconversion

∞ biology

bioreactors

∞ crops

∞ energy sources

energy technology

hydrocarbon fuel production

manures

methanation

vegetation

waste utilization

*biomechanics*

USE **biodynamics**

### biomedical data

RT aerospace medicine

biological effects

∞ biology

biometrics

body measurement (biology)

cardiograms

∞ data

heart rate

IMBLMS

*Biomedical Experiment Scientific Satellite*

USE **BESS (satellite)**

### biometeorology

UF *bioclimatology*

GS meteorology

. **biometeorology**

RT ∞ biology

coastal ecology

coastal plains

ecology

microclimatology

nightglow

phenology

### biometrics

GS bioengineering

. **biometrics**

. . body measurement (biology)

. . . anthropometry

. . . electroplethysmography

. . . cardiography

. . . ballistocardiography

. . . electrocardiography

. . . magnetocardiography

. . . phonocardiography

. . . . echocardiography

. . . seismocardiography

. . . vectorcardiography

. . . echoencephalography

. . . electroencephalography

. . . electromyography

. . . electronystagmography

. . . electroretinography

. . . plethysmography

. . . . electroplethysmography

. . . radiocardiography

RT bioinstrumentation

∞ biology

biomedical data

bone mineral content

∞ engineering

Orbiting Frog Otolith

pupillometry

statistical analysis

∞ statistics

## bionics

DEF The study of systems, particularly electronic systems, which function after the manner characteristic of, or resembling living systems. Used for biological models and biosimulation.

- UF *biological models*  
*biosimulation*
- RT artificial intelligence  
automata theory  
biocontrol systems  
bioengineering  
bioinstrumentation  
biological models (mathematics)
- ∞ biology  
control systems design  
cybernetics  
human factors engineering  
man machine systems  
neuristors  
rheoelectrical simulation  
robots  
simulation  
syncoders  
systems engineering

## biopaks

- GS support systems  
. life support systems  
. . **biopaks**
- RT bioengineering  
biosatellites
- ∞ containers  
enclosures  
portable life support systems  
preserving

## biophysics

- GS **biophysics**  
. health physics  
. . public health
- RT biodynamics  
bioengineering
- ∞ biology  
biomagnetism
- ∞ physics
- ∞ science

## biopolymer denaturation

- UF *denaturation (biopolymers)*  
*nucleic acid denaturation*  
*protein denaturation*
- RT biopolymers  
molecular structure  
nucleic acids  
polymer chemistry  
proteins

## biopolymers

- GS **biopolymers**  
. nucleic acids  
. . deoxyribonucleic acid  
. . ribonucleic acids  
. proteins  
. . albumins  
. . aspartates  
. . calmodulin  
. . elastin  
. . enzymes  
. . . aldolase  
. . . amidase  
. . . carbonic anhydrase  
. . . catalase  
. . . cholinesterase  
. . . cytochromes  
. . . hexokinase  
. . . lysozyme

- . . . nuclease
- . . . oxidase
- . . . papain
- . . . pepsin
- . . . protease
- . . . thrombin
- . . . trypsin
- . . fibrin
- . . globulins
- . . . fibrinogen
- . . . gamma globulin
- . . hemoglobin
- . . . carboxyhemoglobin
- . . . oxyhemoglobin
- . . keratins
- . . lipoproteins
- . . melanin
- . . myoglobin
- . . proteinoids
- . . prothrombin
- . . protoproteins
- RT biopolymer denaturation  
nucleotides
- ∞ polymers  
polynucleotides  
polypeptides

## bioprocessing

- RT aerospace environments  
bioconversion  
biotechnology  
electrophoresis  
microgravity
- ∞ microgravity applications  
pharmacology  
space processing  
spaceborne experiments  
weightlessness

## bioreactors

- DEF Biological processors to remove or produce certain chemicals or a particular chemical.
- RT ∞ biology  
biomass energy production  
biotechnology

## bioregeneration

USE **regeneration (physiology)**

## bioregenerative life support systems

USE **closed ecological systems**

## biorythms

USE **rhythm (biology)**

## BIOS project

- GS programs  
. projects  
. . **BIOS project**

## Biosatellite 1

- GS artificial satellites  
. biosatellites  
. . **Biosatellite 1**
- RT bioastronautics

## Biosatellite 2

- GS artificial satellites  
. biosatellites  
. . **Biosatellite 2**
- RT bioastronautics

## Biosatellite 3

- GS artificial satellites  
. biosatellites  
. . **Biosatellite 3**
- RT ∞ astronautics  
bioastronautics

## biosatellites

SN (EXCLUDES MANNED SPACECRAFT)  
DEF Artificial satellites which are specifically designed to contain and support man, animals, or other living material in a reasonably normal manner for an adequate period of time and which, particularly for man and animals, possesses the proper means for safe return to the Earth.

- GS artificial satellites  
. **biosatellites**  
. . Biosatellite 1  
. . Biosatellite 2  
. . Biosatellite 3  
. . Orbiting Frog Otolith  
. . Sputnik 2 satellite
- RT aerospace environments
- ∞ biology  
biopaks  
environmental control  
extraterrestrial life  
life detectors  
life support systems  
manned spacecraft  
space capsules
- ∞ spacecraft

## biosensors

USE **bioinstrumentation**

## biosimulation

USE **bionics**

## biosphere

DEF That transition zone between Earth and atmosphere within which most forms of terrestrial life are commonly found; the outer portion of the geosphere and inner or lower portion of the atmosphere.

- RT ∞ biology  
chemosphere  
Earth hydrosphere  
free atmosphere  
Gaia hypothesis  
homosphere  
International Geosphere–Biosphere program  
lower atmosphere

## biosynthesis

- RT biological diversity
- ∞ biology  
chemical reactions  
genetic engineering  
metabolites  
prostaglandins
- ∞ synthesis  
synthetic food

## Biot method

- RT calculus of variations
- ∞ methodology

## Biot number

- DEF A standard heat transfer dimensionless number.
- GS dimensionless numbers  
. **Biot number**  
ratios  
. **Biot number**
- RT heat transfer
- ∞ numbers

## biotechnology

DEF The application of engineering and technological principles to the life sciences.

- GS technologies  
. **biotechnology**
- RT artificial cardiac pacemaker

## biotelemetry

- artificial heart valves
- ∞ biology
- bioprocessing
- bioreactors
- blood pumps
- cloning (biology)
- heart implantation
- man machine systems

### biotelemetry

DEF The remote sensing and evaluation of life functions, as, e.g., in spacecraft and artificial satellites. Used for physiological telemetry.

- UF *physiological telemetry*
- GS bioengineering
  - . bioinstrumentation
  - . . **biotelemetry**
- telecommunication
  - . telemetry
  - . . **biotelemetry**
- transmission
  - . signal transmission
  - . . telemetry
  - . . . **biotelemetry**
- RT ∞ biology
- communication equipment
- ∞ engineering
  - Orbiting Frog Otolith
  - pneumography
  - telemedicine
  - wildlife radiolocation

### biotin

- UF *vitamin B complex*
- GS organic compounds
  - . cyclic compounds
  - . . heterocyclic compounds
  - . . . **biotin**
- vitamins
  - . **biotin**
- RT drugs

### biotite

DEF A widely distributed and important rock-forming mineral of the mica group. Used for kimberlite.

- UF *kimberlite*
- GS minerals
  - . mica
  - . . **biotite**

### biphase shift keying

- USE **binary phase shift keying**

### biplanes

- GS **biplanes**
  - . AN-2 aircraft
- RT ∞ aircraft
  - dual wing configurations
  - light aircraft
  - monoplanes
  - tandem wing aircraft
  - utility aircraft

### bipolar transistors

- GS electronic equipment
  - . solid state devices
  - . . semiconductor devices
  - . . . transistors
  - . . . . **bipolar transistors**
- RT bipolarity
  - carrier injection
  - epitaxy
  - majority carriers
  - minority carriers
  - n-p-n junctions
  - semiconductors (materials)

### bipolarity

DEF Capability of assuming negative or positive values.

- RT bipolar transistors
- ∞ polarization

### bipropellants

- USE **liquid rocket propellants**

### bird-aircraft collisions

- GS accidents
  - . aircraft accidents
  - . . **bird-aircraft collisions**
- collisions
  - . midair collisions
  - . . **bird-aircraft collisions**
- RT ∞ aircraft
  - aircraft hazards
  - birds
  - flight hazards
  - ingestion (engines)

### birds

- GS animals
  - . vertebrates
  - . . **birds**
  - . . . chickens
  - . . . pigeons
  - . . . turkeys
  - . . . waterfowl
- RT aircraft hazards
- bird-aircraft collisions
- Earth resources
- endangered species
- flight hazards
- homeotherms
- plumage
- wildlife

### birefringence

DEF A double-refraction phenomenon in which an unpolarized beam of light is divided into two beams with different directions and relative velocities of propagation. The amount of energy transmitted along an optical path through a crystal which exhibits birefringence and is a function of crystalline orientation. Used for Pockels effect.

- UF *Pockels effect*
- GS electromagnetic properties
  - . optical properties
  - . . **birefringence**
  - . . . Kerr electrooptical effect
- refraction
  - . **birefringence**
  - . . Kerr electrooptical effect
- RT anisotropic media
- anisotropy
- birefringent coatings
- birefringent filters
- calcite
- electro-optics
- Moire effects
- nonlinear optics
- photoelasticity
- polarization (waves)
- reflectance
- refractivity
- temperature inversions
- Voigt effect

### birefringent coatings

- GS coatings
  - . **birefringent coatings**
- RT anisotropic media
- birefringence
- birefringent filters
- refractivity

### birefringent filters

- GS electromagnetic wave filters
  - . optical filters
  - . . **birefringent filters**
- RT birefringence
- birefringent coatings
- ∞ filters
  - optical properties
  - refractivity

### Birkeland currents

(added May 1989)

- GS electric current
  - . field aligned currents
  - . . **Birkeland currents**
- ionospheric currents
  - . . **Birkeland currents**
- electricity
  - . atmospheric electricity
  - . . ionospheric currents
  - . . . **Birkeland currents**
- RT auroral electrojets
- auroral zones
- electrojets
- geomagnetism
- ionospheric disturbances
- magnetic disturbances
- magnetic storms

### birth

- RT fertilization
- fetuses
- pregnancy
- reproduction (biology)
- reproductive systems

### bismaleimide

- GS nitrogen compounds
  - . amides
  - . . polyimides
  - . . . **bismaleimide**
- imides
  - . . **bismaleimide**
- RT matrix materials
- polyimide resins
- polymer matrix composites
- resin matrix composites
- resins

### bismuth

- GS chemical elements
  - . **bismuth**
- bismuth isotopes
- metals
  - . **bismuth**
- bismuth isotopes

### bismuth 205

- USE **bismuth isotopes**

### bismuth alloys

- GS alloys
  - . **bismuth alloys**
- RT antimony alloys
- eutectic alloys
- magnesium alloys
- tin alloys

### bismuth compounds

- GS **bismuth compounds**
  - . bismuth oxides
  - . bismuth sulfides
  - . bismuth tellurides
- RT ∞ chemical compounds
  - Group 5A compounds
- ∞ metal compounds

**bismuth isotopes**

- UF *bismuth 205*
- GS chemical elements
  - . bismuth
  - . . **bismuth isotopes**
  - . nuclides
  - . . isotopes
  - . . . **bismuth isotopes**
- metals
  - . bismuth
  - . . **bismuth isotopes**

**bismuth oxides**

- GS bismuth compounds
  - . **bismuth oxides**
- chalcogenides
  - . oxides
  - . . metal oxides
  - . . . **bismuth oxides**
- RT BSCCO superconductors

**bismuth sulfides**

- GS bismuth compounds
  - . **bismuth sulfides**
- chalcogenides
  - . sulfides
  - . . inorganic sulfides
  - . . . **bismuth sulfides**
- sulfur compounds
  - . sulfides
  - . . inorganic sulfides
  - . . . **bismuth sulfides**

**bismuth tellurides**

- GS bismuth compounds
  - . **bismuth tellurides**
- chalcogenides
  - . tellurides
  - . . **bismuth tellurides**
- tellurium compounds
  - . tellurides
  - . . **bismuth tellurides**

**bisphenols**

- GS hydroxyl compounds
  - . alcohols
  - . . phenols
  - . . . **bisphenols**

*bistable amplifiers*USE **flip-flops****bistable circuits**

- GS circuits
  - . **bistable circuits**
  - . . flip-flops
- RT digital techniques
  - . multivibrators
  - . trigger circuits

*bistatic radar*USE **multistatic radar****bistatic reflectivity**

DEF The characteristic of a reflector which reflects energy along a line, or lines, different from, or in addition to, that of the incident ray.

- RT brightness
  - . incident radiation
  - . reflectance
  - . scattering

**bit error rate**

DEF The number of erroneous bits or characters received from some fixed number of bits transmitted.

- GS rates (per time)
  - . **bit error rate**
- RT binary codes

- binary data
- binary digits
- bit synchronization
- bits
- error analysis
- error correcting codes
- error detection codes
- error signals
- pulse communication
- Reed–Solomon codes
- signal to noise ratios
- transmission efficiency
- transmission rate (communications)

**bit synchronization**

- GS synchronism
  - . **bit synchronization**
- RT bit error rate
  - . frequency synchronization

**biternary code**

- RT  $\infty$  codes
  - . differential pulse code modulation
  - . digital systems
  - . pulse code modulation

**bits**

- RT binary digits
  - . bit error rate
  - . drill bits

**bitumens**

DEF Dark-colored (solid, semisolid, or viscous) cementitious substances, natural or manufactured, composed principally of high molecular weight hydrocarbons, of which asphalts, tars, pitches, and asphaltenes are typical.

- RT carbon
  - . coal
  - . coke
  - .  $\infty$  construction materials
  - . lignite
  - .  $\infty$  materials
  - . solvent refined coal

**bivariate analysis**

- GS statistical analysis
  - . variance (statistics)
  - . . multivariate statistical analysis
  - . . . **bivariate analysis**
- RT correlation

**BL Lacertae objects**

DEF One of a class of astronomical objects exhibiting: (1) rapid variations in intensity at radio, infrared, and optical wavelengths; (2) energy distributions largely at infrared wavelengths; (3) absence of discrete features in low dispersion spectra; and (4) strong and rapidly varying polarization at visual and radio wavelengths.

- GS celestial bodies
  - . blazars
  - . . **BL Lacertae objects**
- RT extragalactic radio sources
  - . galaxies
  - . irregular galaxies
  - . luminous intensity
  - . polarization (waves)
  - . radiant flux density
  - . radio sources (astronomy)

**black and white photography**

- GS imagery
  - . photography
  - . . **black and white photography**
- RT all sky photography
  - . astronomical photography
  - . autoradiography

- chronophotography
- cinematography
- cloud photography
- color photography
- electron photography
- electro-optical photography
- frame photography
- infrared photography
- lunar photography
- photomicrography
- photoreconnaissance
- radar photography
- rocket-borne photography
- satellite-borne photography
- Schlieren photography
- shadowgraph photography
- spaceborne photography
- spectroheliographs
- spectrophotography
- stereophotography
- ultraviolet photometry
- urography

*Black Arrow launch vehicle*USE **Black Knight rocket vehicle****black body radiation**

DEF The electromagnetic radiation emitted by an ideal black body; it is the theoretical maximum amount of radiant energy of all wavelengths which can be emitted by a body at a given temperature.

- GS electromagnetic radiation
  - . thermal radiation
  - . . **black body radiation**
- RT brightness distribution
  - . brightness temperature
  - . emissivity
  - . heat radiators
  - . hohlraums
  - . infrared radiation
  - . Kirchhoff law of radiation
  - . light (visible radiation)
  - . nongray atmospheres
  - . nongray gas
  - . Plancks constant
  - . radiance
  - .  $\infty$  radiation
  - . sunlight
  - . ultraviolet radiation

**Black Brant 1 sounding rocket**

- GS rocket vehicles
  - . single stage rocket vehicles
  - . . Black Brant sounding rockets
  - . . . **Black Brant 1 sounding rocket**
  - . . . sounding rockets
  - . . . Black Brant sounding rockets
  - . . . **Black Brant 1 sounding rocket**
- RT solid propellant rocket engines

**Black Brant 2 sounding rocket**

- GS rocket vehicles
  - . single stage rocket vehicles
  - . . Black Brant sounding rockets
  - . . . **Black Brant 2 sounding rocket**
  - . . . sounding rockets
  - . . . Black Brant sounding rockets
  - . . . **Black Brant 2 sounding rocket**
- RT solid propellant rocket engines

**Black Brant 3 sounding rocket**

- GS rocket vehicles
  - . single stage rocket vehicles
  - . . Black Brant sounding rockets
  - . . . **Black Brant 3 sounding rocket**
  - . . . sounding rockets
  - . . . Black Brant sounding rockets

## Black Brant 4 sounding rocket

... **Black Brant 3 sounding rocket**  
RT solid propellant rocket engines

### Black Brant 4 sounding rocket

GS rocket vehicles  
  . single stage rocket vehicles  
  . . **Black Brant sounding rockets**  
  . . . **Black Brant 4 sounding rocket**  
  . . . sounding rockets  
  . . . **Black Brant sounding rockets**  
  . . . **Black Brant 4 sounding rocket**  
RT solid propellant rocket engines

### Black Brant 5 sounding rocket

GS rocket vehicles  
  . single stage rocket vehicles  
  . . **Black Brant sounding rockets**  
  . . . **Black Brant 5 sounding rocket**  
  . . . sounding rockets  
  . . . **Black Brant sounding rockets**  
  . . . **Black Brant 5 sounding rocket**  
RT solid propellant rocket engines

### Black Brant sounding rockets

GS rocket vehicles  
  . single stage rocket vehicles  
  . . **Black Brant sounding rockets**  
  . . . **Black Brant 1 sounding rocket**  
  . . . **Black Brant 2 sounding rocket**  
  . . . **Black Brant 3 sounding rocket**  
  . . . **Black Brant 4 sounding rocket**  
  . . . **Black Brant 5 sounding rocket**  
  . . . sounding rockets  
  . . . **Black Brant sounding rockets**  
  . . . **Black Brant 1 sounding rocket**  
  . . . **Black Brant 2 sounding rocket**  
  . . . **Black Brant 3 sounding rocket**  
  . . . **Black Brant 4 sounding rocket**  
  . . . **Black Brant 5 sounding rocket**  
RT solid propellant rocket engines

### Black Hawk assault helicopter

USE **H-60 Helicopter**

### Black Hills (SD-WY)

GS landforms  
  . mountains  
  . . **Black Hills (SD-WY)**  
RT South Dakota  
Wyoming

### black holes (astronomy)

GS celestial bodies  
  . stars  
  . . **black holes (astronomy)**  
RT accretion disks  
degenerate matter  
event horizon  
gravitational collapse  
gravitational lenses  
massive stars  
naked singularities  
Reissner-Nordstrom solution  
supernova remnants  
white holes (astronomy)  
x ray binaries

### Black Knight rocket vehicle

UF *Black Arrow launch vehicle*  
GS rocket vehicles  
  . multistage rocket vehicles  
  . . **Black Knight rocket vehicle**  
  . . single stage rocket vehicles  
  . . . **Black Knight rocket vehicle**  
RT liquid propellant rocket engines

### Black Sea

GS seas

### . Black Sea

RT Bulgaria  
Romania  
Turkey  
U.S.S.R.

### Blackbird aircraft

USE **SR-71 aircraft**

### Blackburn B-103 aircraft

USE **Buccaneer aircraft**

### ∞ blackout

SN (USE OF A MORE SPECIFIC TERM IS  
RECOMMENDED—CONSULT THE TERMS  
LISTED BELOW)  
RT blackout (physiology)  
blackout (propagation)

### blackout (physiology)

GS syncope  
  . **blackout (physiology)**  
  . . blackout prevention  
  . . unconsciousness  
  . **blackout (physiology)**  
  . . blackout prevention  
RT acceleration tolerance  
  ∞ blackout  
  ∞ coma

### blackout (propagation)

UF *ionospheric blackout*  
GS electromagnetic interference  
  . radio frequency interference  
  . . **blackout (propagation)**  
  . . . polar radio blackout  
RT atmospheric  
  ∞ blackout  
  electromagnetic fields  
  electromagnetic noise  
  ionospheric disturbances  
  plasma sheaths  
  plasmas (physics)  
  radiation effects  
  radio communication  
  reentry communication  
  reentry effects  
  solar activity effects  
  x rays

### blackout prevention

GS human performance  
  . astronaut performance  
  . . **blackout prevention**  
  . . pilot performance  
  . . **blackout prevention**  
  . . syncope  
  . . **blackout (physiology)**  
  . . **blackout prevention**  
  . . unconsciousness  
  . . **blackout (physiology)**  
  . . **blackout prevention**  
RT acceleration tolerance  
  ∞ coma  
  weightlessness

### bladder

GS anatomy  
  . genitourinary system  
  . . **bladder**  
RT prostate gland  
urology

### bladders (mechanics)

USE **diaphragms (mechanics)**

### blade slap

USE **blade-vortex interaction**

### blade slap noise

DEF Impulsive noise (short high pressure  
sound waves) of rotating blades, primarily  
helicopter blades. Used for helicopter impulsive  
noise.

UF *helicopter impulsive noise*

GS elastic waves  
  . sound waves  
  . . noise (sound)  
  . . . aerodynamic noise  
  . . . . **blade slap noise**  
  . . . aircraft noise  
  . . . . **blade slap noise**

RT blade tips  
blade-vortex interaction  
helicopters  
propeller noise

### blade tips

GS tips  
  . **blade tips**  
RT airfoil profiles  
blade slap noise  
blade-vortex interaction  
propeller blades  
rotary wings  
rotor blades (turbomachinery)  
wing tips

### blade-vortex interaction

UF *blade slap*  
  *vortex-blade interaction*  
RT airfoils  
blade slap noise  
blade tips  
helicopters  
interactional aerodynamics  
  ∞ interactions  
  rotary wings  
  vortices  
  wing tip vortices

### ∞ blades

SN (USE OF A MORE SPECIFIC TERM IS  
RECOMMENDED—CONSULT THE TERMS  
LISTED BELOW)  
DEF Arms of propeller and rotating wings.  
Specifically, restrictive, those parts of propellers or  
of rotating wings from the shank outward, i.e.,  
those parts having efficient airfoil shapes and that  
cleave the air. Vanes such as rotating vanes or  
stationary vanes in rotary air compressors, or  
vanes of turbine wheels.

RT airfoils  
blades (cutters)  
compressor blades  
fins  
hydrofoils  
propeller blades  
rims  
rotary wings  
rotor blades (turbomachinery)  
stator blades  
turbine blades  
turbomachine blades  
vanes

### blades (cutters)

GS cutters  
  . **blades (cutters)**  
  . . razor blades  
RT ∞ blades

### ∞ blankets

SN (USE OF A MORE SPECIFIC TERM IS  
RECOMMENDED—CONSULT THE TERMS  
LISTED BELOW)  
RT bedding equipment  
blankets (fission reactors)





## block diagrams

polystyrene	hemorrhages	hematocrit
<b>block diagrams</b>	hypercapnia	hemoperfusion
GS diagrams	hypocapnia	systole
. <b>block diagrams</b>	oximetry	tourniquets
RT charts	Rhesus factor	<b>blood groups</b>
computer programming	transfusion	RT blood
computer programs		platelets
flow charts	<b>blood cells</b>	<b>blood plasma</b>
research management	UF <i>corpuscles (blood)</i>	RT blood
systems analysis	GS cells (biology)	blood cells
<b>Block Island Sound (RI)</b>	. <b>blood cells</b>	body fluids
GS sounds (topographic features)	. . erythrocytes	electrolyte metabolism
. <b>Block Island Sound (RI)</b>	. . . reticulocytes	hematocrit
RT Atlantic Ocean	. . hemocytes	
Rhode Island	. . leukocytes	
	. . . eosinophils	
<b>blocking</b>	. . . lymphocytes	<b>blood pressure</b>
UF <i>obstructing</i>	RT anemias	GS pressure
RT $\infty$ arresters	blood	. <b>blood pressure</b>
closing	blood plasma	. . diastolic pressure
closures	hematopoiesis	. . hypertension
constraints	hematopoietic system	. . hypotension
constrictions	hemoglobin	. . lower body negative pressure
containment		. . systolic pressure
plugging	<b>blood circulation</b>	RT biofeedback
plugs	GS circulation	blood
prevention	. <b>blood circulation</b>	diastole
retarders (devices)	. . brain circulation	heart function
retarding	. . coronary circulation	hemodynamic responses
sealing	. . intercranial circulation	hemoperfusion
seals (stoppers)	. . ocular circulation	manometers
stopping	. . peripheral circulation	ophthalmodynamometry
	. . pulmonary circulation	orthostatic tolerance
<b>blocks</b>	RT artificial cardiac pacemaker	sphygmography
RT cubes (mathematics)	artificial heart valves	systole
pulleys	blood	$\infty$ tension
slabs	blood-brain barrier	<b>blood pumps</b>
<b>bloedite</b>	carboxyhemoglobin	GS medical equipment
DEF A mineral consisting of hydrous sodium	circulatory system	. <b>blood pumps</b>
magnesium sulfate that is colorless. Also known	cyanosis	pumps
as astrakanite or astrochanite.	diastole	. <b>blood pumps</b>
GS minerals	electroplethysmography	RT artificial heart valves
. <b>bloedite</b>	heart function	biotechnology
RT magnesium sulfates	heart implantation	blood
sodium compounds	hematocrit	circulatory system
sulfur compounds	hemodynamic responses	heart
	hemodynamics	pulmonary circulation
<b>blood</b>	hypervolemia	
GS body fluids	hypovolemia	<b>blood vessels</b>
. <b>blood</b>	intravascular system	GS anatomy
. . fibrin	ischemia	. circulatory system
. . fibrinogen	phonoarteriography	. . cardiovascular system
. . thrombin	physiology	. . . <b>blood vessels</b>
. . thromboplastin	rheoencephalography	. . . . arteries
RT anemias	rheometers	. . . . . aorta
biocompatibility	tourniquets	. . . . capillaries (anatomy)
blood cells	<b>blood coagulation</b>	. . . . . glomerulus
blood circulation	GS coagulation	. . . . . veins
blood coagulation	. <b>blood coagulation</b>	RT bifurcation (biology)
blood flow	RT blood	blood
blood groups	clotting	carotid sinus body
blood plasma	fibrin	carotid sinus reflex
blood pressure	hemostatics	catheterization
blood pumps	myocardial infarction	embolisms
blood vessels	platelets	endothelium
blood volume	thrombin	fat embolisms
blood-brain barrier	thrombocytes	vasoconstriction
capillaries (anatomy)	thromboplastin	vasodilation
carboxyhemoglobin test	thrombosis	$\infty$ vessels
cardiovascular system	<b>blood flow</b>	<b>blood volume</b>
coagulation	GS fluid flow	RT blood
heart	. <b>blood flow</b>	cardiac output
hematocrit	RT blood	cardiovascular system
hematopoiesis	capillary flow	chronic conditions
hemoglobin	diastole	clinical medicine
		hematocrit

hematopoietic system  
hemodynamics  
hypervolemia  
hypovolemia  
stroke volume

**blood-brain barrier**

DEF A mechanism which maintains the constancy of the neurons in the central nervous system by preventing certain substances from leaving the bloodstream and entering the neural tissue.

RT  $\infty$  barriers  
blood  
blood circulation  
central nervous system  
neurons

**blowdown wind tunnels**

GS test facilities  
. wind tunnels  
. . **blowdown wind tunnels**  
RT hotshot wind tunnels  
hypersonic wind tunnels  
hypervelocity wind tunnels  
low density research  
low speed wind tunnels  
subsonic wind tunnels  
supersonic wind tunnels  
transonic wind tunnels

**blowers**

RT air conditioning  
air conditioning equipment  
air ducts  
blowing  
centrifugal compressors  
compressors  
cooling systems  
ducted fans  
exhaust systems  
 $\infty$  fans  
impellers  
injectors  
materials handling  
mixers  
 $\infty$  nozzles  
refrigerating machinery  
sealing  
sprayers  
superchargers  
turbomachinery  
ventilation  
ventilation fans  
ventilators

**blowing**

GS **blowing**  
. spanwise blowing  
. tangential blowing  
. under surface blowing  
. upper surface blowing  
RT aeration  
agitation  
blowers  
boundary layer control  
circulation  
circulation control airfoils  
compressing  
entrainment  
exhausting  
externally blown flaps  
forced convection  
injection  
mixing  
 $\infty$  pumping  
spraying

upper surface blown flaps  
wind (meteorology)

**blown flaps**

USE **externally blown flaps**

**blowoff (combustion)**

USE **flameout**

**blowouts**

RT fatigue life  
tires

**Blue Goose missile**

GS decoys  
. **Blue Goose missile**  
missiles  
. surface to air missiles  
. . **Blue Goose missile**  
RT booster rocket engines  
countermeasures  
J-85 engine  
solid propellant rocket engines

**blue green algae**

UF *Cyanophyta*  
GS plants (botany)  
. algae  
. . **blue green algae**  
. . . anabaena  
. . . Microcystis  
. . . Nostoc  
. thermophilic plants  
. . **blue green algae**  
. . . anabaena  
. . . Microcystis  
. . . Nostoc

**Blue Scout rocket vehicle**

GS launch vehicles  
. **Blue Scout rocket vehicle**  
rocket vehicles  
. multistage rocket vehicles  
. . **Blue Scout rocket vehicle**  
RT Algol engine  
solid propellant rocket engines  
X-248 engine  
X-254 engine  
XM-33 engine

**blue stars**

DEF Stars of spectral type O, B, A, or F according to the Draper catalog.

GS celestial bodies  
. stars  
. . early stars  
. . . hot stars  
. . . . **blue stars**  
RT A stars  
B stars  
F stars  
O stars

**Blue Steel missile**

GS missiles  
. **Blue Steel missile**  
RT liquid propellant rocket engines

**Blue Streak launch vehicle**

GS launch vehicles  
. **Blue Streak launch vehicle**  
rocket vehicles  
. **Blue Streak launch vehicle**  
RT Eldo launch vehicle  
liquid propellant rocket engines

**Blue Streak missile**

GS missiles  
. ballistic missiles

. . intermediate range ballistic missiles  
. . . **Blue Streak missile**  
. surface to surface missiles  
. . intermediate range ballistic missiles  
. . . **Blue Streak missile**  
rocket vehicles  
. **Blue Streak missile**  
RT liquid propellant rocket engines

**blueprints**

GS documents  
. drawings  
. . engineering drawings  
. . . **blueprints**  
RT layouts  
reproduction (copying)

**bluff bodies**

DEF Bodies having a broad, flattened front, as in some reentry vehicles.

RT blunt bodies  
 $\infty$  bodies  
ducted bodies  
forebodies  
lifting bodies  
reentry vehicles  
Roshko prediction

**bluffs (landforms)**

USE **cliffs**

**blunt bodies**

RT aerodynamic configurations  
aerodynamics  
axisymmetric bodies  
bluff bodies  
 $\infty$  bodies  
ducted bodies  
forebodies  
missile bodies  
nose cones  
power law bodies  
stagnation point  
symmetrical bodies

**blunt leading edges**

DEF The obtuse cross sections of certain front edges of airfoils or wings.

GS edges  
. leading edges  
. . **blunt leading edges**  
RT airfoils  
forebodies  
trailing edges

**blunt trailing edges**

DEF The rounded or obtuse angled trailing edges of wings and/or control surfaces designed to enhance aerodynamic characteristics.

GS edges  
. trailing edges  
. . **blunt trailing edges**  
RT airfoils  
control surfaces  
wings

**blurring**

RT aberration  
resolution  
spatial filtering

**BMC**

USE **bone mineral content**

**BMEWS**

USE **Ballistic Missile Early Warning System**

## BO-105 helicopter

### BO-105 helicopter

- GS Bolkow aircraft
  - . **BO-105 helicopter**
- passenger aircraft
- . **BO-105 helicopter**
- utility aircraft
- . **BO-105 helicopter**
- V/STOL aircraft
- . rotary wing aircraft
- . . helicopters
- . . . military helicopters
- . . . . **BO-105 helicopter**

### boards (paper)

- UF *fiberboard*
- RT $\infty$  construction materials
- paper (material)
- papers

### boats

- GS surface vehicles
  - . **boats**
  - . . lifeboats
  - water vehicles
  - . **boats**
  - . . lifeboats
- RT amphibious vehicles
- harbors
- inflatable structures
- keels
- $\infty$  military vehicles
- research vehicles
- ships
- underwater vehicles

### boattails

- DEF The rear portions of elongated bodies, as in rockets, having decreasing cross-sectional area toward the rear.
- RT afterbodies
- skirts
- tail assemblies

### BOD

- USE **biochemical oxygen demand**

### $\infty$ bodies

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT afterbodies
- axisymmetric bodies
- bluff bodies
- blunt bodies
- bodies of revolution
- celestial bodies
- centerbodies
- ducted bodies
- elastic bodies
- finned bodies
- flexible bodies
- foreign bodies
- Herbig-Haro objects
- human body
- lenticular bodies
- lifting bodies
- maneuverable reentry bodies
- missile bodies
- planforms
- plastic bodies
- pyramidal bodies
- reentry vehicles
- rotating bodies
- slender bodies
- solids
- streamlined bodies
- symmetrical bodies
- three dimensional bodies

- towed bodies
- two dimensional bodies

### bodies of revolution

DEF Symmetrical bodies having the form described by rotating a plane curve about an axis in its plane.

- GS symmetrical bodies
  - . **bodies of revolution**
  - . . conical bodies
  - . . . slender cones
  - . . cylindrical bodies
  - . . . rotating cylinders
  - . . parabolic bodies
  - . . power law bodies
  - . . spheres
  - . . . celestial sphere
  - . . . concentric spheres
  - . . . falling spheres
  - . . . Poincare spheres
  - . . . rotating spheres
  - . . toruses
- RT aerodynamic configurations
- aerodynamics
- axes of rotation
- axisymmetric bodies
- $\infty$  bodies
- cones
- disks (shapes)
- ellipsoids
- finned bodies
- geometry
- $\infty$  hemispheres
- hemispherical shells
- ogives
- $\infty$  rings
- spherical shells
- streamlined bodies

### body centered cubic lattices

- UF *BCC lattices*
- GS crystal lattices
  - . cubic lattices
  - . . **body centered cubic lattices**
- RT close packed lattices
- cluster variation method
- crystals
- face centered cubic lattices

### body composition (biology)

- GS composition (property)
  - . **body composition (biology)**
- RT $\infty$  biology
- chemical composition
- exoskeletons

### body fluids

- GS **body fluids**
  - . blood
  - . . fibrin
  - . . fibrinogen
  - . . thrombin
  - . . thromboplastin
  - . cerebrospinal fluid
  - . endolymph
  - . lymph
  - . mucus
  - . saliva
  - . sweat
  - . urine
- RT blood plasma
- diuresis
- edema
- electrolyte metabolism
- $\infty$  fluids
- isotonicity
- lysozyme

- mineral metabolism
- obesity
- perspiration
- secretions
- water
- water balance

### body kinematics

- GS kinematics
  - . **body kinematics**
- RT acceleration (physics)
- acceleration stresses (physiology)
- kinetics
- particle theory
- velocity

### body measurement (biology)

- SN (LIMITED TO BIOLOGICAL APPLICATIONS—FOR MEASUREMENT OF NON-BIOLOGICAL BODIES USE SIZE DETERMINATION)
- GS bioengineering
  - . biometrics
  - . . **body measurement (biology)**
  - . . . anthropometry
  - . . . electroplethysmography
- RT $\infty$  biology
- biomedical data
- electrocardiography
- electroencephalography
- electrophysiology
- $\infty$  engineering
- human body
- human factors engineering
- obesity
- size determination
- $\infty$  sizing

### body size (biology)

- RT anthropometry
- $\infty$  biology
- obesity

### body sway test

- GS physiological tests
  - . **body sway test**
- RT $\infty$  equilibrium
- head down tilt
- vertical perception
- vestibular tests

### body temperature

- SN (LIMITED TO TEMPERATURE OF BIOLOGICAL BODIES)
- GS temperature
  - . **body temperature**
- RT cold tolerance
- fever
- heat acclimatization
- heat stroke
- heat tolerance
- homeostasis
- homeotherms
- humidity
- hyperthermia
- hypothermia
- perspiration
- poikilothermia
- shivering
- thermoreceptors
- thermoregulation
- vasoconstriction
- vasodilation

### body temperature (non-biological)

- USE **temperature**

### body temperature regulation

- USE **thermoregulation**

**body volume (biology)**

- GS volume
  - . **body volume (biology)**
- RT $\infty$  biology
  - obesity

**body weight**

- GS weight (mass)
  - . **body weight**
- RT obesity
  - weightlessness

**body-wing and tail configurations**

- GS aerodynamic configurations
  - . **body-wing and tail configurations**
- RT $\infty$  configurations
  - fuselages
  - tail assemblies
  - wings

**body-wing configurations**

- GS aerodynamic configurations
  - . **body-wing configurations**
- RT airfoils
  - drooped airfoils
  - GAW-2 airfoil
  - wings

**Boeing 2707 aircraft**

- GS Boeing aircraft
  - . **Boeing 2707 aircraft**
  - commercial aircraft
  - . supersonic commercial air transport
  - . . **Boeing 2707 aircraft**
  - jet aircraft
  - . **Boeing 2707 aircraft**
  - passenger aircraft
  - . **Boeing 2707 aircraft**
  - supersonic aircraft
  - . supersonic transports
  - . . supersonic commercial air transport
  - . . . **Boeing 2707 aircraft**
  - transport aircraft
  - . **Boeing 2707 aircraft**
- RT $\infty$  aircraft

**Boeing 707 aircraft**

- GS Boeing aircraft
  - . **Boeing 707 aircraft**
  - commercial aircraft
  - . **Boeing 707 aircraft**
  - jet aircraft
  - . turbofan aircraft
  - . . **Boeing 707 aircraft**
  - monoplanes
  - . **Boeing 707 aircraft**
  - passenger aircraft
  - . **Boeing 707 aircraft**
  - transport aircraft
  - . **Boeing 707 aircraft**
- RT $\infty$  aircraft

**Boeing 720 aircraft**

- GS Boeing aircraft
  - . **Boeing 720 aircraft**
  - commercial aircraft
  - . **Boeing 720 aircraft**
  - jet aircraft
  - . turbofan aircraft
  - . . **Boeing 720 aircraft**
  - monoplanes
  - . **Boeing 720 aircraft**
  - passenger aircraft
  - . **Boeing 720 aircraft**
  - transport aircraft
  - . **Boeing 720 aircraft**
- RT $\infty$  aircraft

**Boeing 727 aircraft**

- GS Boeing aircraft
  - . **Boeing 727 aircraft**
  - commercial aircraft
  - . **Boeing 727 aircraft**
  - jet aircraft
  - . turbofan aircraft
  - . . **Boeing 727 aircraft**
  - passenger aircraft
  - . **Boeing 727 aircraft**
  - transport aircraft
  - . **Boeing 727 aircraft**
- RT $\infty$  aircraft
  - cargo aircraft

**Boeing 733 aircraft**

- GS Boeing aircraft
  - . **Boeing 733 aircraft**
  - commercial aircraft
  - . **Boeing 733 aircraft**
  - jet aircraft
  - . turbofan aircraft
  - . . **Boeing 733 aircraft**
  - monoplanes
  - . **Boeing 733 aircraft**
  - supersonic aircraft
  - . **Boeing 733 aircraft**
  - transport aircraft
  - . **Boeing 733 aircraft**
- RT $\infty$  aircraft
  - variable sweep wings

**Boeing 737 aircraft**

- GS Boeing aircraft
  - . **Boeing 737 aircraft**
  - commercial aircraft
  - . **Boeing 737 aircraft**
  - jet aircraft
  - . turbofan aircraft
  - . . **Boeing 737 aircraft**
  - monoplanes
  - . **Boeing 737 aircraft**
  - passenger aircraft
  - . **Boeing 737 aircraft**
  - transport aircraft
  - . **Boeing 737 aircraft**
- RT $\infty$  aircraft
  - cargo aircraft

**Boeing 747 aircraft**

- GS Boeing aircraft
  - . **Boeing 747 aircraft**
  - commercial aircraft
  - . **Boeing 747 aircraft**
  - jet aircraft
  - . **Boeing 747 aircraft**
  - passenger aircraft
  - . **Boeing 747 aircraft**
  - transport aircraft
  - . **Boeing 747 aircraft**
- RT $\infty$  aircraft
  - SOFIA (airborne observatory)
  - turbofan engines
  - X-34 reusable launch vehicle

*Boeing 747B aircraft*USE **E-4A aircraft****Boeing 757 aircraft**

- DEF Boeing's twin turbofan short/medium range transport aircraft that made its first flight on February 19, 1982.
- GS Boeing aircraft
  - . **Boeing 757 aircraft**
  - commercial aircraft
  - . **Boeing 757 aircraft**
  - jet aircraft
  - . turbofan aircraft

. . **Boeing 757 aircraft**

- monoplanes
- . **Boeing 757 aircraft**
- passenger aircraft
- . **Boeing 757 aircraft**
- transport aircraft
- . **Boeing 757 aircraft**

RT $\infty$  aircraft**Boeing 767 aircraft**

DEF Boeing's widebodied medium range commercial transport aircraft that made its first flight on September 26, 1981.

- GS Boeing aircraft
  - . **Boeing 767 aircraft**
  - commercial aircraft
  - . **Boeing 767 aircraft**
  - jet aircraft
  - . turbofan aircraft
  - . . **Boeing 767 aircraft**
  - monoplanes
  - . **Boeing 767 aircraft**
  - passenger aircraft
  - . **Boeing 767 aircraft**
  - transport aircraft
  - . **Boeing 767 aircraft**
- RT $\infty$  aircraft
  - cargo aircraft
  - turbofan engines

**Boeing 777 aircraft***(added September 1994)*

- GS Boeing aircraft
  - . **Boeing 777 aircraft**
  - commercial aircraft
  - . **Boeing 777 aircraft**
  - jet aircraft
  - . **Boeing 777 aircraft**
  - passenger aircraft
  - . **Boeing 777 aircraft**
  - transport aircraft
  - . **Boeing 777 aircraft**
- RT $\infty$  aircraft

**Boeing aircraft**

- UF *Vertol military helicopters*
- GS **Boeing aircraft**
  - . B-47 aircraft
  - . B-50 aircraft
  - . B-52 aircraft
  - . Boeing 707 aircraft
  - . Boeing 720 aircraft
  - . Boeing 727 aircraft
  - . Boeing 733 aircraft
  - . Boeing 737 aircraft
  - . Boeing 747 aircraft
  - . Boeing 757 aircraft
  - . Boeing 767 aircraft
  - . Boeing 777 aircraft
  - . Boeing 2707 aircraft
  - . C-135 aircraft
  - . CH-21 helicopter
  - . CH-46 helicopter
  - . CH-47 helicopter
  - . CH-62 helicopter
  - . E-3A aircraft
  - . E-4A aircraft
  - . H-25 helicopter
  - . V-22 aircraft
  - . VZ-2 aircraft
  - . X-20 aircraft
- RT $\infty$  aircraft
  - AWACS aircraft
  - YC-14 aircraft

## Bogoliubov theory

### Bogoliubov theory

- RT BBGKY hierarchy
- ∞ theories

### bogs

- USE marshlands

### Bohr magneton

DEF A constant equivalent to the magnetic moment of an electron.

- GS constants
- . Bohr magneton
- RT electrons
- magnetic moments

### Bohr theory

- GS theoretical physics
- . quantum theory
- . Bohr theory
- RT electron transitions
- line spectra
- ∞ theories

### boiler plate

- GS structural members
- . plates (structural members)
- . metal plates
- . boiler plate
- RT thick walls

### boilers

- UF steam generators
- GS heating equipment
- . boilers
- RT external combustion engines
- furnaces
- ∞ generators
- heat balance
- pressure vessels
- steam
- vaporizers
- waste energy utilization

### boiling

- UF ebullition
- GS phase transformations
- . vaporizing
- . boiling
- . film boiling
- . nucleate boiling
- . Leidenfrost phenomenon
- RT effervescence
- evaporation
- evolution (liberation)
- heat transfer
- heating

### boiling water reactors

- GS nuclear reactors
- . liquid cooled reactors
- . water cooled reactors
- . boiling water reactors
- . experimental boiling water reactors
- . Halden Boiling Water Reactor
- . Los Alamos Water Boiler Reactor
- . Pathfinder nuclear reactor
- . Spert reactors
- RT nuclear power reactors
- nuclear research and test reactors

### bolides

DEF Brilliant meteors, especially ones which explode; detonating fireballs.

- GS celestial bodies
- . meteoroids
- . bolides

- . . . . . Cyrillid meteoroids
- RT atmospheric entry
- atmospheric heating
- ∞ fireballs
- meteor trails
- meteorites
- meteoroid showers
- Pribram meteorite

### Bolivia

- GS nations
- . Bolivia
- RT South America

### Bolkow aircraft

- GS Bolkow aircraft
- . BO-105 helicopter
- RT ∞ aircraft

### boll weevils

- GS animals
- . invertebrates
- . arthropods
- . insects
- . . . . . Coleoptera
- . . . . . boll weevils
- RT bollworms
- cotton
- infestation

### bollworms

- GS animals
- . invertebrates
- . arthropods
- . insects
- . . . . . bollworms
- larvae
- . bollworms
- RT boll weevils
- corn
- cotton
- fruits
- infestation
- moths

### bolograms

- USE bolometers

### bolometers

DEF Instruments which measure the intensity of radiant energy by employing thermally sensitive electrical resistors; a type of actinometer. Used for bolograms.

- UF bolograms
- GS measuring instruments
- . radiation measuring instruments
- . bolometers
- RT Dicke radiometers
- electrical measurement
- heat measurement
- infrared detectors
- photometers
- potentiometers (instruments)
- radiation pyrometers
- radiometers
- resistance thermometers
- temperature measurement
- temperature measuring instruments
- x ray detectors

### bolted joints

DEF Joints fastened with bolts. They are usually designed for heavy loads.

- GS joints (junctions)
- . bolted joints
- RT bolts
- lap joints
- riveted joints

### bolts

- GS fasteners
- . bolts
- . rock bolts
- . tiebolts
- RT anchors (fasteners)
- bolted joints
- couplings
- holders
- nuts (fasteners)
- screws
- studs (structural members)
- threads

### Boltzmann distribution

- GS distribution (property)
- . Boltzmann distribution
- RT atmospheric density
- atmospheric diffusion
- kinetic theory
- statistical mechanics
- two fluid models

### Boltzmann transport equation

- RT BBGKY hierarchy
- BGK model
- Burnett equations
- Chapman–Enskog theory
- ∞ equations
- Fokker–Planck equation
- hydrodynamic equations
- kinetic theory
- particle diffusion
- statistical mechanics
- transport properties
- transport theory

### Boltzmann–Vlasov equation

- RT ∞ equations
- high temperature plasmas
- Maxwell equation
- partial differential equations
- wave equations

### Bolza problems

- RT optimization
- ∞ problems

### BOMARC A missile

- GS missiles
- . antiaircraft missiles
- . BOMARC missiles
- . . . BOMARC A missile
- . surface to air missiles
- . BOMARC missiles
- . . . BOMARC A missile
- RT liquid propellant rocket engines
- solid propellant rocket engines

### BOMARC B missile

- GS missiles
- . antiaircraft missiles
- . BOMARC missiles
- . . . BOMARC B missile
- . surface to air missiles
- . BOMARC missiles
- . . . BOMARC B missile
- RT liquid propellant rocket engines
- solid propellant rocket engines

### BOMARC missiles

- GS missiles
- . antiaircraft missiles
- . BOMARC missiles
- . . . BOMARC A missile
- . . . BOMARC B missile
- . surface to air missiles
- . BOMARC missiles

. . . BOMARC A missile  
. . . BOMARC B missile

### **bomb calorimeters**

GS measuring instruments  
. calorimeters  
. . **bomb calorimeters**  
RT drop calorimeters  
flame calorimeters  
heat measurement  
high temperature tests  
temperature measuring instruments

### **∞ bombardment**

SN (USE OF A MORE SPECIFIC TERM IS  
RECOMMENDED—CONSULT THE TERMS  
LISTED BELOW)  
RT electron bombardment  
hypervelocity projectiles  
irradiation  
meteoritic damage  
sputtering

### **bomber aircraft**

GS attack aircraft  
. **bomber aircraft**  
. . A-2 aircraft  
. . A-3 aircraft  
. . A-4 aircraft  
. . A-5 aircraft  
. . A-6 aircraft  
. . B-1 aircraft  
. . B-2 aircraft  
. . B-26 aircraft  
. . B-47 aircraft  
. . B-50 aircraft  
. . B-52 aircraft  
. . B-57 aircraft  
. . B-58 aircraft  
. . B-66 aircraft  
. . B-70 aircraft  
. . F-111 aircraft  
. . Shackleton bomber  
. . Valiant aircraft  
. . Victor MK-1 aircraft  
. . Vulcan aircraft  
RT ∞ aircraft  
antisubmarine warfare aircraft  
bombing equipment  
F-117A aircraft  
jet aircraft  
∞ military aircraft  
∞ military aviation  
tanker aircraft  
training aircraft  
Vampire MK 35 aircraft

### **bombing equipment**

GS onboard equipment  
. aircraft equipment  
. . **bombing equipment**  
RT B-1 aircraft  
bomber aircraft  
bombs (ordnance)  
∞ equipment  
fire control

### **∞ bombs**

SN (USE OF A MORE SPECIFIC TERM IS  
RECOMMENDED—CONSULT THE TERMS  
LISTED BELOW)  
RT bombs (ordnance)  
precision guided projectiles  
pressure gages  
samplers

### **bombs (ordnance)**

DEF Explosive devices designed to be  
detonated under specified conditions.

GS explosive devices  
. **bombs (ordnance)**  
RT ammunition  
B-1 aircraft  
bombing equipment  
∞ bombs  
explosives  
incendiary ammunition  
missiles  
nuclear weapons  
projectiles  
pyrotechnics  
shaped charges  
torpedoes  
warheads

### **bombs (pressure gages)**

USE **pressure gages**

### **bombs (samplers)**

USE **samplers**

### **Bonanza aircraft**

USE **C-35 aircraft**

### **bond graphs**

GS charts  
. graphs (charts)  
. . **bond graphs**  
RT control systems design  
differential equations  
dynamic models  
mathematical models  
∞ mathematics  
simulation  
systems analysis  
systems engineering

### **bonded joints**

(added March 1993)

UF **bondlines**  
GS joints (junctions)  
. **bonded joints**  
RT adhesive bonding  
bonding  
rocket engine cases  
rocket linings  
soldered joints  
solid propellant rocket engines  
welded joints

### **bonding**

DEF Specifically, a system of connections  
between all metal parts of an aircraft or other  
structure forming a continuous electrical unit and  
preventing jumping or arching of static electricity.  
Glueing or cementing together for structural  
strength.

GS **bonding**  
. adhesive bonding  
. agglutination  
. ceramic bonding  
. explosive welding  
. inertia bonding  
. metal bonding  
. . metal-metal bonding  
. reaction bonding  
. resin bonding  
RT adhesion  
adhesion tests  
beam leads  
binding  
bonded joints  
cementation  
chemical bonds

cohesion  
cold welding  
debonding (materials)  
diffusion welding  
∞ joining  
joints (junctions)  
laminates  
laser welding  
sealing  
soldering  
superplastic forming  
welding

### **bondlines**

USE **bonded joints**

### **Bondoc meteorite**

GS celestial bodies  
. meteorites  
. . stony meteorites  
. . . achondrites  
. . . **Bondoc meteorite**

### **bone demineralization**

GS demineralizing  
. **bone demineralization**  
diseases  
. **bone demineralization**  
RT biological effects  
∞ biology  
bones  
osteoporosis  
physiological effects  
physiology  
weightlessness

### **bone marrow**

GS anatomy  
. musculoskeletal system  
. . connective tissue  
. . . **bone marrow**  
RT bones  
cancer  
erythrocytes  
hematopoiesis  
hematopoietic system  
leukemias  
leukocytes

### **bone mineral content**

UF **BMC**  
GS content  
. **bone mineral content**  
RT bioengineering  
∞ biology  
biometrics  
bones  
calcium carbonates  
calcium phosphates  
collagens  
minerals  
osteoporosis

### **bones**

GS anatomy  
. musculoskeletal system  
. . **bones**  
. . . femur  
. . . pelvis  
. . . scapula  
. . . skull  
. . . . cranium  
. . . . . intracranial cavity  
. . . . mastoids  
. . . spine  
. . . . vertebrae  
. . . sternum  
. . . tibia

## Bonne projection

RT . . . ulna  
arthritis  
bone demineralization  
bone marrow  
bone mineral content  
calcification  
cartilage  
chin  
connective tissue  
exoskeletons  
joints (anatomy)  
lamella  
osteoporosis  
spinal cord  
splints

### Bonne projection

DEF A type of conical map projection in which meridians are plotted as curves and the parallels are spaced along them at true distances.

RT mapping  
maps  
∞ projection

### Boolean algebra

DEF The study of the manipulation of symbols representing operations according to the rules of logic. Boolean algebra corresponds to an algebra using only the numbers 0 and 1, therefore can be used in programming digital computers which operate on the binary principle.

GS mathematical logic  
. lattices (mathematics)  
. . **Boolean algebra**  
. . . Boolean functions

RT algebra  
∞ conjunction  
instruction sets (computers)  
∞ logic  
set theory  
switching theory  
transistor logic  
∞ unions

### Boolean functions

GS functions (mathematics)  
. **Boolean functions**  
mathematical logic  
. lattices (mathematics)  
. . Boolean algebra  
. . . **Boolean functions**

### boom

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)  
RT booms (equipment)  
sonic booms  
tail assemblies

### booms (equipment)

GS positioning devices (machinery)  
. **booms (equipment)**  
RT ∞ boom  
cranes

### boost

USE **acceleration (physics)**

### booster recovery

RT expendable stages (spacecraft)  
recoverable launch vehicles  
∞ recovery  
recovery parachutes  
spacecraft recovery

### booster rocket engines

UF *rocket boosters*  
GS engines

. rocket engines  
. . **booster rocket engines**  
. . . AJ-10 engine  
. . . Algol engine  
. . . apogee boost motors  
. . . H-1 engine  
. . . LR-87-AJ-5 engine  
. . . M-1 engine  
. . . M-55 engine  
. . . MA-2 engine  
. . . MA-3 engine  
. . . MA-5 engine  
. . . Nike booster rocket engines  
. . . P-1 engine  
. . . rocket engine 9KS-11000  
. . . Space Shuttle Boosters  
. . . . Advanced Solid Rocket Motor (STS)  
. . . X-405 engine

RT air breathing boosters  
Blue Goose missile  
∞ boosters  
burnout  
ducted rocket engines  
expendable stages (spacecraft)  
F-1 rocket engine  
hybrid propellant rocket engines  
internal combustion engines  
launch vehicles  
liftoff (launching)  
liquid propellant rocket engines  
Mace missiles  
nuclear engine for rocket vehicles  
nuclear rocket engines  
oxygen-hydrocarbon rocket engines  
recoverable spacecraft  
solid propellant rocket engines  
spinning solid upper stage  
stage separation  
sustainer rocket engines  
turbo-rocket engines  
TX-354 engine

### ∞ booster rockets

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)  
RT launch vehicles

### ∞ boosters

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)  
RT air breathing boosters  
amplifiers  
apogee boost motors  
booster rocket engines  
boosters (explosives)  
launch vehicles  
Scout project  
Space Shuttle Boosters  
Titan project

### boosters (explosives)

GS explosive devices  
. initiators (explosives)  
. . **boosters (explosives)**  
igniters  
. initiators (explosives)  
. . **boosters (explosives)**  
RT ∞ boosters  
exploding wires

### boostglide vehicles

DEF Vehicles designed to glide in the atmosphere following a rocket-powered phase.

Portions of the flights may be ballistic, out of the atmosphere.

GS gliders  
. **boostglide vehicles**  
. . X-20 aircraft  
reentry vehicles  
. **boostglide vehicles**  
. . X-20 aircraft  
RT aerospace planes  
∞ aircraft  
Astro vehicle  
gliding  
hypersonic aircraft  
hypersonic gliders  
lifting reentry vehicles  
manned spacecraft  
recoverable spacecraft  
rocket planes  
∞ vehicles

### boots (footwear)

GS clothing  
. **boots (footwear)**  
RT shoes

### Boral

GS composite materials  
. **Boral**  
composite structures  
. laminates  
. . **Boral**  
RT aluminum  
boron carbides  
radiation shielding

### boranes

GS boron compounds  
. boron hydrides  
. . **boranes**  
. . . carborane  
. . . hydrazine borane  
. . . pentaboranes  
hydrogen compounds  
. hydrides  
. . boron hydrides  
. . . **boranes**  
. . . . carborane  
. . . . hydrazine borane  
. . . . pentaboranes  
RT borohydrides

### borates

GS boron compounds  
. **borates**  
. . lithium borates  
RT boric acids  
∞ oxygen compounds

### Borazon (trademark)

USE **boron nitrides**

### borders

RT boundaries  
margins  
rims

### Bordoni peaks

RT elastic deformation  
plastic deformation  
resonant frequencies  
stress relaxation

### boredom

RT detachment  
human behavior  
human reactions  
lethargy  
monotony  
psychological effects

psychology  
space flight stress

**boreholes**

DEF Holes made by drilling into the ground to study stratification, to search for or to obtain natural resources, or to release underground pressures.

RT cavities  
clays  
drilling  
excavation  
exploration  
geology  
gravels  
∞ holes  
minerals  
pits (excavations)  
rocks  
shales  
soils

**Borel sets**

GS analysis (mathematics)  
. real variables  
. . . measure and integration  
. . . **Borel sets**  
mathematical logic  
. set theory  
. . **Borel sets**  
RT probability theory

**bores**

USE **cavities**

**borescopes**

USE **endoscopes**

**boresight error**

DEF Linear displacement between two parallel lines of sight.

GS errors  
. position errors  
. . **boresight error**  
RT air navigation  
boresights  
directional antennas  
displacement  
displacement measurement  
error analysis  
instrument errors  
line of sight communication  
navigation instruments  
optical tracking  
range errors

**boresights**

RT boresight error  
directional antennas  
optical tracking

**boric acids**

GS acids  
. **boric acids**  
boron compounds  
. **boric acids**  
RT borates

**borides**

GS boron compounds  
. **borides**  
. . chromium borides  
. . titanium borides  
RT intermetallics

**boring machines**

GS tools  
. machine tools

**. . boring machines**

RT drills  
∞ machinery

**Born approximation**

UF *Born–Mayer equation*  
GS analysis (mathematics)  
. numerical analysis  
. . approximation  
. . . **Born approximation**  
RT ∞ equations  
quantum mechanics  
scattering cross sections

**Born–Infeld theory**

RT electrodynamics  
electrostatics  
Maxwell equation  
nonlinear equations  
∞ theories

*Born–Mayer equation*

USE **Born approximation**

**Born–Oppenheimer approximation**

GS analysis (mathematics)  
. numerical analysis  
. . approximation  
. . . **Born–Oppenheimer approximation**  
RT Franck–Condon principle

**borohydrides**

GS boron compounds  
. **borohydrides**  
. . aluminum borohydrides  
. . beryllium borohydrides  
hydrogen compounds  
. hydrides  
. . **borohydrides**  
. . . aluminum borohydrides  
. . . beryllium borohydrides  
RT boranes  
boron hydrides

**boron**

GS chemical elements  
. metalloids  
. . **boron**  
. . . boron isotopes  
. . . . boron 10  
RT boron reinforced materials  
Borsic (tradename)

**boron 10**

GS chemical elements  
. metalloids  
. . boron  
. . . boron isotopes  
. . . . **boron 10**  
. nuclides  
. . isotopes  
. . . boron isotopes  
. . . . **boron 10**

**boron alloys**

GS alloys  
. **boron alloys**  
RT metalloids

**boron carbides**

GS boron compounds  
. **boron carbides**  
carbon compounds  
. carbides  
. . **boron carbides**  
RT Boral  
ceramic fibers

**boron chlorides**

GS boron compounds  
. **boron chlorides**  
halogen compounds  
. chlorine compounds  
. . chlorides  
. . . **boron chlorides**  
. halides  
. . chlorides  
. . . **boron chlorides**

**boron compounds**

GS **boron compounds**  
. borates  
. . lithium borates  
. boric acids  
. borides  
. . chromium borides  
. . titanium borides  
. borohydrides  
. . aluminum borohydrides  
. . beryllium borohydrides  
. boron carbides  
. boron chlorides  
. boron fluorides  
. boron hydrides  
. . aluminum borohydrides  
. . beryllium borohydrides  
. boranes  
. . . carborane  
. . . hydrazine borane  
. . . pentaboranes  
. boron nitrides  
. boron oxides  
. boron phosphides  
. diborane  
. organic boron compounds  
. tourmaline  
RT ∞ chemical compounds  
Group 3A compounds  
high energy fuels  
metal fuels  
metal propellants

**boron fibers**

DEF Fibers produced by vapor deposition methods; used in various composite materials to impart a balance of strength and stiffness.

GS fibers  
. reinforcing fibers  
. . **boron fibers**  
RT aluminum boron composites  
Borsic (tradename)  
carbon fibers  
composite materials  
fiber composites  
fiber orientation  
fiber strength  
∞ filaments  
glass fibers  
metal matrix composites  
polymer matrix composites  
reinforced plastics

**boron fluorides**

UF *boron trifluoride*  
GS boron compounds  
. **boron fluorides**  
halogen compounds  
. fluorine compounds  
. . fluorides  
. . . **boron fluorides**  
. halides  
. . fluorides  
. . . **boron fluorides**



## boron hydrides

### boron hydrides

- GS boron compounds
  - . **boron hydrides**
  - . . aluminum borohydrides
  - . . beryllium borohydrides
  - . . boranes
  - . . . carborane
  - . . . hydrazine borane
  - . . . pentaboranes
  - hydrogen compounds
  - . hydrides
  - . . **boron hydrides**
  - . . . aluminum borohydrides
  - . . . beryllium borohydrides
  - . . . boranes
  - . . . . carborane
  - . . . . hydrazine borane
  - . . . . pentaboranes
- RT borohydrides

### boron isotopes

- GS chemical elements
  - . metalloids
  - . . boron
  - . . . **boron isotopes**
  - . . . . boron 10
  - . nuclides
  - . . isotopes
  - . . . **boron isotopes**
  - . . . . boron 10

### boron nitrides

- UF *Borazon (trademark)*
- GS boron compounds
  - . **boron nitrides**
  - nitrogen compounds
  - . nitrides
  - . . **boron nitrides**

### boron oxides

- GS boron compounds
  - . **boron oxides**
  - chalcogenides
  - . oxides
  - . . **boron oxides**

### boron phosphides

- GS boron compounds
  - . **boron phosphides**
  - phosphorus compounds
  - . phosphides
  - . . **boron phosphides**

### boron reinforced materials

- GS composite materials
  - . **boron reinforced materials**
  - . . aluminum boron composites
  - . . boron-epoxy composites
- RT boron
  - ceramic matrix composites
  - epoxy resins
  - fiber composites
  - fibers
- ∞ materials
  - plastics
  - reinforced plastics
  - reinforcing fibers

### boron trifluoride

- USE **boron fluorides**

### boron-epoxy composites

- GS composite materials
  - . boron reinforced materials
  - . . **boron-epoxy composites**
  - . . polymer matrix composites
  - . . epoxy matrix composites
  - . . . **boron-epoxy composites**

- . resin matrix composites
- . . **boron-epoxy composites**
- RT aircraft structures
- ∞ chemical compounds
  - composite structures
  - epoxy resins
  - fiber composites
  - laminates
  - plastic aircraft structures
  - spacecraft components
  - superhybrid materials

### borosilicate glass

- DEF Low expansion heat resistant glass.
- Used for Pyrex (trademark).
- UF *Pyrex (trademark)*
- GS glass
  - . **borosilicate glass**
- RT glassware
  - honeycomb mirrors
  - silicon dioxide

### Borsic (tradename)

- DEF Trademark of United Aircraft Products, Inc. for its boron aluminum composite materials.
- GS composite materials
  - . metal matrix composites
  - . . **Borsic (tradename)**
- RT aluminum
  - boron
  - boron fibers
  - fiber composites
- ∞ materials
  - metal fibers
  - metals

### Bose geometry

- GS geometry
  - . **Bose geometry**
- RT equations of state

### Bose-Chaudhuri-Hocquenghem codes

- USE **BCH codes**

### Bose-Einstein condensates

- (added February 1996)
- GS condensates
  - . **Bose-Einstein condensates**
- RT bosons
  - condensed matter physics
  - ideal gas
  - relativistic effects
  - superfluidity

### Bose-Einstein statistics

- USE **quantum statistics**

### Bosnia

- USE **Bosnia and Herzegovina**

### Bosnia and Herzegovina

- (added June 1996)
- UF *Bosnia*
  - Herzegovina*
- GS nations
  - . **Bosnia and Herzegovina**
- RT Croatia
  - Europe
  - Serbska Republic
  - Yugoslavia

### boson fields

- RT field theory (physics)
- ∞ fields
  - mesons

### bosons

- GS particles
  - . elementary particles

### . . bosons

- . . . alpha particles
- . . . Higgs bosons
- . . . mesons
  - . . . . eta-mesons
  - . . . . hyperons
  - . . . . . xi hyperons
  - . . . . kaons
  - . . . . meson resonance
  - . . . . . X mesons
  - . . . . muons
  - . . . . omega-mesons
  - . . . . pions
  - . . . . vector mesons
  - . . . . . rho-mesons
  - . . . . . sigma-mesons
- . . . photons
- . . . xi hyperons
- . nuclear particles

### . . bosons

- . . . alpha particles
- . . . Higgs bosons
- . . . mesons
  - . . . . eta-mesons
  - . . . . hyperons
  - . . . . . xi hyperons
  - . . . . kaons
  - . . . . meson resonance
  - . . . . . X mesons
  - . . . . muons
  - . . . . omega-mesons
  - . . . . pions
  - . . . . vector mesons
  - . . . . . rho-mesons
  - . . . . . sigma-mesons
- . . . photons
- . . . xi hyperons

- RT Bose-Einstein condensates
  - charged particles
  - Fermi-Dirac statistics
  - quantum statistics
  - standard model (particle physics)
  - string theory
  - supersymmetry

### botany

- GS **botany**
  - . geobotany
- RT agriculture
  - alfalfa
  - barley
  - biogeochemistry
- ∞ biology
  - blight
  - brown wave effect
  - brush (botany)
  - chaparral
  - citrus trees
  - corn
  - farm crops
  - fruits
  - green wave effect
  - habitats
  - hay
  - leguminous plants
  - oats
  - plants (botany)
- ∞ science
  - silviculture
  - sugar beets
  - sugar cane
  - tomatoes
  - vegetation growth
  - vineyards
- ∞ zoology

## Botswana

- GS nations
  - . **Botswana**
- RT Africa
  - Republic of South Africa

## bottles

- RT  $\infty$  containers
  - flasks
  - glassware
  - tanks (containers)

## Bouguer law

DEF A relationship describing the rate of decrease of flux density of a plane-parallel beam of monochromatic radiation as it penetrates a medium which both scatters and absorbs at that wavelength. Used for Lambert law.

- UF *Lambert law*
- RT absorptivity
  - Beer law
  - electromagnetic absorption
  - thermoplasticity

## boules

- GS crystals
  - . **boules**
- RT single crystals

## boundaries

- UF *peripheries*
- GS **boundaries**
  - . core-mantle boundary
  - . fluid boundaries
  - . . gas-solid interfaces
  - . . jet boundaries
  - . . liquid-liquid interfaces
  - . . liquid-solid interfaces
  - . . liquid-vapor interfaces
  - . free boundaries
  - . grain boundaries
- RT airspace
  - borders
  - boundary conditions
  - circumferences
  - contour sensors
  - delineation
  - fences (barriers)
  - interfaces
  - regions

## boundary conditions

- (added July 1990)
- GS conditions
  - . **boundary conditions**
- RT boundaries
  - boundary layers
  - boundary value problems
  - vortex lattice method

## boundary detection (imagery)

- USE **edge detection**

## boundary element method

DEF Technique for solving two- and three-dimensional boundary value problems in thermodynamics, mechanics, etc.

- GS stress analysis
  - . **boundary element method**
- RT apertures

## boundary integral method

DEF Technique related to the boundary element method, and used for laminar and turbulent flow problems.

- GS analysis (mathematics)
  - . numerical analysis
  - . . **boundary integral method**

## procedures

- . **boundary integral method**
- RT boundary value problems
  - $\infty$  methodology

## boundary layer combustion

- GS combustion
  - . **boundary layer combustion**
- RT boundary layers
  - combustible flow
  - convective heat transfer
  - diffusion flames
  - flame propagation
  - laminar boundary layer
  - reacting flow

## boundary layer control

- UF *laminar flow control*
- GS **boundary layer control**
  - . porous boundary layer control
- RT aerodynamics
  - airfoil fences
    - $\infty$  bleeding
    - blowing
    - boundary layers
    - buffeting
    - circulation control airfoils
  - control
    - control surfaces
    - drag devices
    - fluid amplifiers
    - flutter
    - jet control
    - leading edge slats
    - lift augmentation
    - lift devices
    - riblets
    - spoilers
    - tangential blowing
    - turbulence
    - upper surface blown flaps
    - vacuum
    - vortex generators
    - wing slots
    - X-21 aircraft

## boundary layer equations

- GS flow equations
  - . **boundary layer equations**
  - . . Blasius equation
- RT boundary layers
  - differential equations
    - $\infty$  equations
    - flow theory
    - Reynolds averaging

## boundary layer flow

- GS fluid flow
  - . viscous flow
  - . . **boundary layer flow**
  - . . . reattached flow
  - . . . secondary flow
  - . . . separated flow
  - . . . . boundary layer separation
- RT air currents
  - atmospheric boundary layer
  - backward facing steps
  - Blasius equation
  - boundary layer thickness
  - convective heat transfer
  - flow distribution
  - forward facing steps
  - Lighthill gas model
  - Magnus effect
  - recirculative fluid flow
  - Reynolds number
  - stagnation flow

## stagnation point

- Tollmien-Schlichting waves
- wall flow

## boundary layer noise

- USE **aerodynamic noise**
- boundary layers**

## boundary layer plasmas

DEF Plasmas resulting from the frictional heat of hypersonic spacecraft entering the Earth's atmosphere.

- GS particles
  - . charged particles
  - . . energetic particles
  - . . . plasmas (physics)
  - . . . . **boundary layer plasmas**
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- . . . . **boundary layer plasmas**
- RT aerodynamic heating
  - aerothermodynamics
  - boundary layers
  - hypersonic reentry
  - plasma physics
  - plasma sheaths

## boundary layer separation

- UF *breakaway*
  - flow separation*
  - laminar boundary layer separation*
- GS fluid flow
  - . viscous flow
  - . . boundary layer flow
  - . . . separated flow
  - . . . . **boundary layer separation**
- RT aerodynamic stalling
  - airspeed
  - angle of attack
  - boundary layers
  - Crocco-Lee theory
  - $\infty$  diffusers
    - Falkner-Skan equation
    - flow distribution
    - injection
    - Kutta-Joukowski condition
    - lift drag ratio
    - reattached flow
    - recirculative fluid flow
    - reversed flow
    - rotating stalls
  - $\infty$  separation
    - stagnation flow
  - $\infty$  stalling
    - sweep angle
    - vortex generators
    - zero lift

## boundary layer stability

- GS dynamic characteristics
  - . dynamic stability
  - . . motion stability
  - . . . flow stability
  - . . . . **boundary layer stability**
- . flow characteristics
- . . flow stability
- . . . **boundary layer stability**
- stability
  - . dynamic stability
  - . . motion stability
  - . . . flow stability
  - . . . . **boundary layer stability**
- RT aerodynamic stability
  - backwash
  - boundary layers
  - Goertler instability

## boundary layer thickness

Reynolds number

### boundary layer thickness

(added September 1995)

- SN (LIMITED TO FLUID DYNAMICS, DO NOT USE FOR PLANETARY OR CORE MANTLE BOUNDARIES)
- GS thickness
  - . **boundary layer thickness**
- RT boundary layer flow
  - flow distribution
  - pressure gradients
  - surface layers
  - transition flow

### boundary layer transition

- RT air currents
  - boundary layers
  - Ekman layer
  - Goertler instability
  - Knudsen flow
  - laminar boundary layer
  - laminar flow
  - molecular flow
  - Reynolds number
  - three dimensional boundary layer
  - Tollmien–Schlichting waves
- ∞ transition
  - transition flow
- ∞ transition layers
  - transition points
  - turbulence
  - turbulent boundary layer
  - turbulent flow

### boundary layers

- UF *boundary layer noise*
- GS **boundary layers**
  - . atmospheric boundary layer
  - . compressible boundary layer
  - . hypersonic boundary layer
  - . incompressible boundary layer
  - . laminar boundary layer
  - . planetary boundary layer
  - . supersonic boundary layers
  - . thermal boundary layer
  - . three dimensional boundary layer
  - . turbulent boundary layer
  - . two dimensional boundary layer
- RT asthenosphere
  - boundary conditions
  - boundary layer combustion
  - boundary layer control
  - boundary layer equations
  - boundary layer plasmas
  - boundary layer separation
  - boundary layer stability
  - boundary layer transition
  - core–mantle boundary
  - Crocco method
- ∞ draft
  - drag
  - fluid boundaries
  - fluid flow
  - gas–solid interfaces
- ∞ layers
  - liquid–liquid interfaces
  - liquid–solid interfaces
  - mixing layers (fluids)
  - panel method (fluid dynamics)
  - shear layers
  - surface layers
  - wall pressure

### boundary lubrication

- GS lubrication
  - . **boundary lubrication**
- RT bearings

lubricants  
squeeze films  
vapor phase lubrication  
wear resistance

### boundary value problems

DEF Physical problems completely specified by a differential equation in an unknown, valid in a certain region of space, and certain information (boundary condition) about the unknown, given on the boundaries of that region. The information required to determine the solution depends completely and uniquely on the particular problem. Used for initial value problems and point matching method (mathematics).

- UF *initial value problems*
  - point matching method (mathematics)*
- GS **boundary value problems**
  - . Cauchy problem
  - . Dirichlet problem
  - . Neumann problem
- RT Bessel functions
  - boundary conditions
  - boundary integral method
  - counter rotation
  - Crank–Nicholson method
  - differential equations
  - finite element method
  - finite volume method
  - half planes
  - half spaces
  - Hankel functions
  - ill–posed problems (mathematics)
  - Lame functions
  - Mathieu function
  - minimal surfaces
  - Monge–Ampere equation
  - observability (systems)
- ∞ problems
  - Sobolev space
  - three dimensional bodies

### Bourdon tubes

- GS transducers
  - . pressure sensors
  - . . **Bourdon tubes**
- RT pressure gages
  - pressure measurement
- ∞ tubes

### Boussinesq approximation

DEF The assumption (frequently used in the theory of convection) that the fluid is incompressible except insofar as the thermal expansion produces a buoyancy.

- RT convection
  - heat transfer
  - incompressible fluids
  - perturbation theory
  - thermal expansion

### bow shock waves

USE **shock waves**

### bow waves

DEF Shock waves in front of a body, such as an airfoil, or apparently attached to the forward tip of the body.

- RT hypersonic wakes
  - Mach cones
  - magnetosheath
  - shock waves
  - surface waves

### ∞ bows

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT bending
  - camber
  - forebodies
  - heaving

### box beams

- GS structural members
  - . beams (supports)
  - . . **box beams**
- RT ∞ boxes
  - cantilever beams
  - girders
  - rectangular beams

### ∞ boxes

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT box beams
  - boxes (containers)

### boxes (containers)

- RT ∞ boxes
  - ∞ buckets
  - cases (containers)
  - ∞ containers
  - packages

### BPSK

USE **binary phase shift keying**

### brackets

- RT anchors (fasteners)
  - fasteners
  - fixtures
  - holders
  - mounting

### bradycardia

- GS rates (per time)
  - . heart rate
  - . . **bradycardia**
  - signs and symptoms
  - . **bradycardia**
- RT heart diseases

### Bragg angle

DEF The angle between the incident beam and the lattice planes considered.

- GS geometry
  - . Euclidean geometry
  - . . angles (geometry)
  - . . . **Bragg angle**
- RT Bragg gratings
  - Bragg reflectors
  - crystallography
  - DBR lasers
  - diffraction
  - diffraction paths
  - electron diffraction
  - isotropy
- ∞ orientation
- ∞ physical properties
  - radiography

### Bragg cells

(added September 1988)

- GS modulators
  - . **Bragg cells**
- RT acousto–optics
  - amplitude modulation
  - crystal optics
  - light beams
  - light modulation
  - phase demodulators
  - phase modulation

ultrasonic light modulation

### Bragg curve

DEF A curve showing the average specific ionization of an ionizing particle of a particular kind as a function of its kinetic energy, velocity, or residual range.

RT biological effects  
nuclear reactions  
particle interactions  
radiation effects

### Bragg gratings

(added August 1997)

GS gratings (spectra)  
. **Bragg gratings**

RT Bragg angle  
Bragg reflectors  
interferometers  
optical fibers  
optical filters

### Bragg mirrors

USE **Bragg reflectors**

### Bragg reflectors

(added August 1997)

UF *Bragg mirrors*  
GS reflectors

. **Bragg reflectors**

RT Bragg angle  
Bragg gratings  
DBR lasers  
gallium arsenides  
mirrors  
semiconductor lasers

### Braided composites

(added November 1992)

GS composite materials  
. fiber composites  
. . **braided composites**  
RT carbon fiber reinforced plastics  
epoxy matrix composites  
graphite-epoxy composites  
reinforcing fibers  
three dimensional composites  
woven composites

### braille

DEF A system of writing that uses characters made up of raised dots. It was named after Louis Braille.

RT blindness  
embossing

### brain

GS anatomy  
. nervous system  
. . central nervous system  
. . . **brain**  
. . . . brain stem  
. . . . cerebellum  
. . . . cerebral ventricles  
. . . . cerebrum  
. . . . . cerebral cortex  
. . . . . occipital lobes  
. . . . . diencephalon  
. . . . . hypothalamus  
. . . . . pineal gland  
. . . . . thalamus  
. . . . . hippocampus

RT angiography  
brain circulation  
brain damage  
cerebrospinal fluid  
echoencephalography  
electroencephalography

encephalitis  
head (anatomy)  
information processing (biology)  
intracranial pressure  
neuroglia  
neurology  
pituitary gland  
psychiatry  
psychology  
rheoencephalography  
spinal cord

### brain circulation

GS circulation  
. blood circulation  
. . **brain circulation**  
RT brain  
rheoencephalography

### brain damage

GS injuries  
. **brain damage**  
RT brain

### brain stem

GS anatomy  
. nervous system  
. . central nervous system  
. . . brain  
. . . . **brain stem**

### ∞ brakes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)  
RT brakes (for arresting motion)  
brakes (forming or bending)

### brakes (for arresting motion)

UF *decelerators*  
*dragulators*  
GS **brakes (for arresting motion)**  
. aerodynamic brakes  
. . ballutes  
. . drag chutes  
. . split flaps  
. . wing flaps  
. . . leading edge flaps  
. . . leading edge slats  
. . . trailing edge flaps  
. . . vortex flaps  
. . aircraft brakes  
. . split flaps  
. . wing flaps  
. . . leading edge flaps  
. . . leading edge slats  
. . . trailing edge flaps  
. . . vortex flaps  
. wheel brakes

RT abort apparatus  
antiskid devices

∞ arresters

∞ arresting gear

∞ brakes

braking  
cylindrical chambers  
drag devices  
flaps (control surfaces)  
landing gear  
nose wheels  
parachutes  
retarders (devices)  
thrust reversal  
towed bodies  
vehicle wheels  
wheels

### brakes (forming or bending)

RT ∞ brakes  
metal working

### braking

RT brakes (for arresting motion)  
deceleration  
eddy currents  
retarders (devices)  
retarding  
thrust reversal

### branching (mathematics)

DEF The appearance of a new solution of a mathematical equation at some critical value of a parameter, as a result of which there may be more than one solution (different branches) of the equation. Used for bifurcation (mathematics)

UF *bifurcation (mathematics)*

GS **branching (mathematics)**

. period doubling  
RT chaos  
functions (mathematics)  
∞ logic  
mathematical logic  
set theory  
switching theory

### branching (physics)

RT bifurcation (biology)  
∞ physics

### brasses

GS alloys  
. copper alloys  
. . **brasses**

### Bravais crystals

GS crystals  
. **Bravais crystals**  
RT crystal growth  
crystal lattices  
crystal structure  
packing density  
single crystals

### Brayton cycle

DEF A thermodynamic cycle consisting of two constant-pressure processes interspersed with two constant-entropy cycles. Named after George B. Brayton, American engineer.

GS cycles  
. thermodynamic cycles  
. . **Brayton cycle**

RT gas turbine engines  
gas turbines  
Rankine cycle  
solar dynamic power systems

### Brazil

GS nations  
. **Brazil**  
RT Amazon region (South America)  
Brazilian space program  
South America

### Brazilian space program

DEF The space program of Brazil which is under the jurisdiction of the Instituto de Pesquisas Espaciais (INPE).

GS programs  
. space programs  
. . **Brazilian space program**  
RT Brazil

### brazing

GS welding  
. fusion welding  
. . gas welding

## breadboard models

- . . . **brazing**
  - . . . . low temperature brazing
- RT fluxes
  - ∞ joining
  - metal bonding
  - sealing
  - soldering
  - ultrasonic soldering
- Brazzaville*
  - USE **Congo (Brazzaville)**
- breadboard models**
  - DEF Assemblies of preliminary circuits or parts used to prove the feasibility of a device, circuit, system, or principle without regard to the final configuration or packaging of the parts.
  - GS models
    - . **breadboard models**
  - RT circuits
    - printed circuits
    - product development
    - prototypes
- breakaway*
  - USE **boundary layer separation**
- ∞ **breakdown**
  - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT TERMS LISTED BELOW)
  - RT classifications
    - electrical faults
    - failure
    - gaps
    - metal working
    - system failures
- breakers (electric)*
  - USE **circuit breakers**
- breaking**
  - RT destruction
    - fragmentation
  - ∞ separation
- breakup (spacecraft)*
  - USE **spacecraft breakup**
- breakwaters**
  - DEF Offshore structures (such as moles, walls, or jetties) that by breaking the force of waves, protect harbors, anchorages, beaches, or shore areas. Used for jetties and sea walls.
  - UF *jetties*
    - sea walls*
  - RT concrete structures
    - harbors
    - littoral drift
    - littoral transport
    - oceanography
    - structural design
  - ∞ structures
    - underwater engineering
    - underwater structures
    - water waves
  - ∞ waves
- ∞ **breathing**
  - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
  - RT argon-oxygen atmospheres
    - breathing apparatus
    - breathing vibration
    - emergency breathing techniques
    - expiration
    - helium-oxygen atmospheres
    - high altitude breathing
    - hypercapnia

- hyperpnea
- oxygen breathing
- respiration
- respiratory reflexes
- breathing apparatus**
  - GS **breathing apparatus**
    - . oxygen masks
    - . underwater breathing apparatus
  - RT ∞ breathing
    - ∞ equipment
    - fire fighting
    - life support systems
    - oxygen supply equipment
    - portable life support systems
    - respirators
- breathing vibration**
  - GS vibration
    - . structural vibration
    - . . **breathing vibration**
  - RT bending vibration
    - ∞ breathing
    - exhausting
    - missile vibration
    - venting
- breccia**
  - GS rocks
    - . **breccia**
  - RT ataxite
    - igneous rocks
    - regolith
    - sedimentary rocks
    - soils
- breeder reactors**
  - GS nuclear reactors
    - . **breeder reactors**
    - . . Experimental Breeder Reactor 1
    - . . Experimental Breeder Reactor 2
    - . . light water breeder reactors
    - . . liquid metal fast breeder reactors
  - RT Enrico Fermi atomic power plant
    - nuclear power reactors
- breeding (reproduction)**
  - RT fertility
    - genetics
    - heredity
    - reproduction (biology)
- Breguet 1150 aircraft**
  - UF *Atlantic aircraft*
  - GS antisubmarine warfare aircraft
    - . **Breguet 1150 aircraft**
    - attack aircraft
      - . **Breguet 1150 aircraft**
    - Breguet aircraft
      - . **Breguet 1150 aircraft**
    - jet aircraft
      - . turboprop aircraft
      - . . **Breguet 1150 aircraft**
    - monoplanes
      - . **Breguet 1150 aircraft**
      - reconnaissance aircraft
        - . **Breguet 1150 aircraft**
  - RT ∞ aircraft
- Breguet 940 aircraft**
  - GS Breguet aircraft
    - . **Breguet 940 aircraft**
  - monoplanes
    - . **Breguet 940 aircraft**
  - research vehicles
    - . research aircraft
    - . . **Breguet 940 aircraft**
  - V/STOL aircraft

- . short takeoff aircraft
- . . **Breguet 940 aircraft**
- RT ∞ aircraft
- Breguet 941 aircraft**
  - GS Breguet aircraft
    - . **Breguet 941 aircraft**
  - jet aircraft
    - . turboprop aircraft
    - . . **Breguet 941 aircraft**
  - monoplanes
    - . **Breguet 941 aircraft**
  - passenger aircraft
    - . **Breguet 941 aircraft**
  - transport aircraft
    - . cargo aircraft
    - . . **Breguet 941 aircraft**
  - V/STOL aircraft
    - . short takeoff aircraft
    - . . **Breguet 941 aircraft**
- RT ∞ aircraft
- Breguet aircraft**
  - GS **Breguet aircraft**
    - . Breguet 940 aircraft
    - . Breguet 941 aircraft
    - . Breguet 1150 aircraft
  - RT ∞ aircraft
    - Jaguar aircraft
- bremsstrahlung**
  - DEF Electromagnetic radiation produced by the rapid change in the velocity of an electron or another fast, charged particle as it approaches an atomic nucleus and is deflected by it. In German it means braking radiation.
  - GS electromagnetic radiation
    - . **bremsstrahlung**
  - RT Cerenkov radiation
    - diffraction radiation
    - electron photon cascades
    - electron radiation
    - far ultraviolet radiation
    - gamma ray bursts
    - gamma rays
    - nuclear radiation
    - relativistic plasmas
    - synchrotron radiation
    - x rays
- Brewster angle**
  - GS geometry
    - . Euclidean geometry
    - . . angles (geometry)
    - . . . **Brewster angle**
  - RT polarization characteristics
    - reflection
    - refractivity
- bricks**
  - DEF Solid masonry units of clay or shale, usually formed into a rectangular prism while plastic and burned or fired in a kiln. Bricks are ceramic products.
  - GS masonry
    - . **bricks**
  - RT cements
    - ceramics
    - clays
  - ∞ construction materials
    - mortars (material)
- ∞ **bridges**
  - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
  - RT bridges (landforms)
    - bridges (structures)
    - electric bridges

- liquid bridges
- bridges (landforms)**
  - GS landforms
    - . **bridges (landforms)**
  - RT ∞ bridges
    - geology
    - ∞ ridges
- bridges (structures)**
  - RT ∞ bridges
    - construction
    - construction industry
    - crossings
    - crossovers
    - highways
    - ramps (structures)
    - ∞ structures
    - towers
- Bridgman method**
  - RT crystal growth
    - ∞ methodology
    - single crystals
- brightness**
  - DEF The attribute of visual perception in accordance with which an area appears to emit more or less light.
  - GS electromagnetic properties
    - . optical properties
    - . . **brightness**
    - . . . sky brightness
  - RT bistatic reflectivity
    - brightness distribution
    - color
    - dimming
    - emissivity
    - flux (rate)
    - glare
    - human factors engineering
    - illuminance
    - illuminating
    - incandescence
    - ∞ intensity
      - light (visible radiation)
      - limb brightening
      - luminance
      - luminescence
      - luminosity
      - luminous intensity
      - luster
      - radiance
      - radiant flux density
      - reflectance
      - stellar luminosity
      - visibility
      - vision
- brightness discrimination**
  - GS discrimination
    - . sensory discrimination
    - . . **brightness discrimination**
  - RT ∞ illumination
    - visual perception
- brightness distribution**
  - DEF The statistical distribution based on brightness, or the distribution of brightness over the surface of an object.
  - GS distribution (property)
    - . **brightness distribution**
    - electromagnetic properties
    - . optical properties
    - . . **brightness distribution**
    - statistical distributions
    - . **brightness distribution**
  - RT astrophysics
- black body radiation
- brightness
  - brightness temperature
    - ∞ distribution
    - galactic radiation
    - photography
    - radiant flux density
    - radio astronomy
    - solar granulation
    - stellar luminosity
- brightness temperature**
  - DEF In astrophysics, the temperature of a black body radiating the same amount of energy per unit area at the wavelengths under consideration as the observed body. The temperature of a nonblack body determined by measurement with an optical pyrometer.
  - GS temperature
    - . **brightness temperature**
  - RT astrophysics
    - black body radiation
    - brightness distribution
    - limb brightening
    - meteorology
    - photography
    - radio astronomy
    - temperature measurement
- Brillouin effect**
  - RT ∞ effects
    - frequency shift
    - light scattering
    - monochromatic radiation
- Brillouin flow**
  - GS electric current
    - . **Brillouin flow**
  - RT beam currents
    - electron beams
    - electron optics
    - ∞ flow
      - traveling wave tubes
- Brillouin zones**
  - GS regions
    - . **Brillouin zones**
  - RT band structure of solids
    - conduction bands
    - crystal lattices
    - Fermi surfaces
    - free electrons
- Brillouin–Wigner equation**
  - RT ∞ equations
- brines**
  - DEF Water saturated or strongly impregnated with common salt.
  - RT coolants
    - refrigerants
    - salinity
    - salt baths
    - salt beds
    - sea water
- briquets**
  - RT blanks
    - pellets
    - tablets
- Bristol–Siddeley BS 53 engine**
  - UF *Pegasus engine*
  - GS engines
    - . air breathing engines
    - . . gas turbine engines
    - . . . jet engines
    - . . . . turbojet engines
- . . . . turbofan engines
- . . . . . **Bristol–Siddeley BS 53 engine**
- . internal combustion engines
- . . gas turbine engines
- . . . jet engines
- . . . . turbojet engines
- . . . . . turbofan engines
- . . . . . **Bristol–Siddeley BS 53 engine**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- . . . . turbojet engines
- . . . . . turbofan engines
- . . . . . **Bristol–Siddeley BS 53 engine**
- RT P–1127 aircraft
- Bristol–Siddeley Olympus 593 engine**
  - GS engines
    - . air breathing engines
    - . . gas turbine engines
    - . . . jet engines
    - . . . . turbojet engines
    - . . . . . **Bristol–Siddeley Olympus 593 engine**
    - . internal combustion engines
    - . . gas turbine engines
    - . . . jet engines
    - . . . . turbojet engines
    - . . . . . **Bristol–Siddeley Olympus 593 engine**
    - . turbine engines
    - . . gas turbine engines
    - . . . jet engines
    - . . . . turbojet engines
    - . . . . . **Bristol–Siddeley Olympus 593 engine**
- Bristol–Siddeley Viper engine**
  - GS engines
    - . air breathing engines
    - . . gas turbine engines
    - . . . jet engines
    - . . . . turbojet engines
    - . . . . . **Bristol–Siddeley Viper engine**
    - . internal combustion engines
    - . . gas turbine engines
    - . . . jet engines
    - . . . . turbojet engines
    - . . . . . **Bristol–Siddeley Viper engine**
    - . turbine engines
    - . . gas turbine engines
    - . . . jet engines
    - . . . . turbojet engines
    - . . . . . **Bristol–Siddeley Viper engine**
- British Aircraft Corp aircraft*
- USE **BAC aircraft**
- British Columbia**
  - GS nations
    - . Canada
    - . . **British Columbia**
- British Guinea*
- USE **Guyana**
- British Honduras*
- USE **Belize**
- brittle materials**
  - RT cleavage
    - cracking (fracturing)
    - embrittlement
    - fracture strength
    - granular materials

## brittleness

- hardness
- impact strength
- ∞ materials
- porous materials

*brittle–ductile transition*

USE **ductile–brittle transition**

### brittleness

- GS mechanical properties
  - . **brittleness**
- RT Charpy impact test
  - cleavage
  - cold hardening
  - crack closure
  - crack initiation
  - crack propagation
  - cracking (fracturing)
  - ductile–brittle transition
  - ductility
  - embrittlement
  - fractography
  - fracture strength
  - fracturing
  - hardness
  - impact strength
  - impact tests
  - notch strength
  - notch tests
  - toughness
  - weldability

### broadband

- UF *wideband*
- GS bandwidth
  - . **broadband**
  - frequencies
  - . **broadband**
- RT asynchronous transfer mode
  - ∞ bands
  - frequency response
  - log periodic antennas
  - narrowband
  - spiral antennas

### broadband amplifiers

- GS amplifiers
  - . **broadband amplifiers**
- RT bandwidth
  - frequencies
  - wideband communication

### broadcasting

- UF *radio broadcasting*
- GS telecommunication
  - . **broadcasting**
- RT communication networks
  - direct broadcast satellites
  - radio communication
  - radio equipment
  - radio signals
  - radio transmission
  - Symphonie satellites
  - transmission
  - Voice of America

### broken symmetry

- DEF Phenomena where a loss of symmetry is present such as in piezoelectricity. Used for symmetry breaking.
- UF *symmetry breaking*
- GS symmetry
  - . **broken symmetry**
- RT grand unified theory
  - Higgs bosons
  - mathematical models
  - supergravity
  - supersymmetry

theoretical physics

### bromates

- GS halogen compounds
  - . bromine compounds
  - . . **bromates**
- RT ∞ oxygen compounds

### bromides

- GS halogen compounds
  - . bromine compounds
  - . . **bromides**
  - . . . ammonium bromides
  - . . . cesium bromides
  - . . . chromium bromides
  - . . . dibromides
  - . . . hydrobromic acid
  - . . . hydrobromides
  - . . . magnesium bromides
  - . . . potassium bromides
  - . . . silver bromides
  - . . . sodium bromides
  - . . . strontium bromides
  - . halides
  - . . **bromides**
  - . . . ammonium bromides
  - . . . cesium bromides
  - . . . chromium bromides
  - . . . dibromides
  - . . . hydrobromic acid
  - . . . hydrobromides
  - . . . magnesium bromides
  - . . . potassium bromides
  - . . . silver bromides
  - . . . sodium bromides
  - . . . strontium bromides
- RT salt beds

### bromination

- GS chemical reactions
  - . halogenation
  - . . **bromination**

### bromine

- GS chemical elements
  - . halogens
  - . . **bromine**
  - . . . bromine isotopes

*bromine 82*

USE **bromine isotopes**

*bromine 87*

USE **bromine isotopes**

### bromine compounds

- GS halogen compounds
  - . **bromine compounds**
  - . . bromates
  - . . bromides
  - . . . ammonium bromides
  - . . . cesium bromides
  - . . . chromium bromides
  - . . . dibromides
  - . . . hydrobromic acid
  - . . . hydrobromides
  - . . . magnesium bromides
  - . . . potassium bromides
  - . . . silver bromides
  - . . . sodium bromides
  - . . . strontium bromides
- RT ∞ chemical compounds
  - halocarbons
  - polybrominated biphenyls

### bromine isotopes

- UF *bromine 82*
  - bromine 87*
- GS chemical elements

- . halogens
- . . bromine
- . . . **bromine isotopes**
- . nuclides
- . . isotopes
- . . . **bromine isotopes**

### bronchi

- UF *bronchial tubes*
- GS anatomy
  - . respiratory system
  - . . **bronchi**
- RT lungs
  - trachea
  - ∞ tubes

*bronchial tubes*

USE **bronchi**

### bronzes

- GS alloys
  - . copper alloys
  - . . **bronzes**

### Borsen–Metcalf comet

*(added May 1991)*

- GS celestial bodies
  - . comets
  - . . **Borsen–Metcalf comet**
- RT solar system

### broths

- RT ∞ food
  - nutrition

### brown dwarf stars

*(added March 1989)*

- GS celestial bodies
  - . stars
  - . . **brown dwarf stars**
- RT companion stars
  - cool stars
  - dwarf stars
  - protostars
  - stellar evolution

### brown wave effect

- RT annual variations
  - botany
  - chlorophylls
  - ∞ effects
  - foliage
  - leaves

### Brownian movements

- RT colloids
  - dispersions
  - Einstein equations
  - emulsions
  - Fokker–Planck equation
  - ∞ motion
  - ∞ suspensions

*Bruceton test*

USE **statistical tests**

### brucite

- GS chalcogenides
  - . oxides
  - . . **brucite**
  - . magnesium compounds
  - . . **brucite**
  - . minerals
  - . . **brucite**

### Bruderheim meteorite

- GS celestial bodies
  - . meteorites
  - . . stony meteorites
  - . . . chondrites

- ... **Bruderheim meteorite**
- Brunei**
- GS nations
    - . **Brunei**
  - RT Asia
- Brunt–Vaisala frequency**
- DEF The frequency at which an air parcel will oscillate when subjected to an infinitesimal perturbation in a stably stratified atmosphere.
- GS constraints
    - . meteorological parameters
    - . **Brunt–Vaisala frequency**
  - RT frequencies
    - . **Brunt–Vaisala frequency**
  - air currents
  - air flow
  - air masses
  - atmospheric circulation
  - atmospheric physics
  - atmospheric stratification
  - oscillations
- brush (botany)**
- UF *scrubs (botany)*
  - GS plants (botany)
    - . **brush (botany)**
    - . . chaparral
  - RT botany
    - defoliation
    - Earth resources
    - guayule
    - herbicides
- brush seals**
- (added July 1991)
- GS seals (stoppers)
    - . **brush seals**
  - RT leakage
- brushes**
- GS **brushes**
    - . brushes (electrical contacts)
  - RT electric contacts
    - electric generators
    - electric motors
- brushes (electrical contacts)**
- DEF Conductive metal or carbon blocks used to make sliding electrical contact with a moving part as in an electric motor.
- GS brushes
    - . **brushes (electrical contacts)**
  - RT electric contacts
    - electric generators
    - electric motors
- Bryophytes**
- UF *liverworts*
    - mosses*
  - GS plants (botany)
    - . **Bryophytes**
- BSCCO superconductors**
- (added March 1993)
- UF *Bi–Sr–Ca–Cu–O superconductors*
  - GS chalcogenides
    - . oxides
    - . . metal oxides
    - . . . mixed oxides
    - . . . . **BSCCO superconductors**
  - conductors
    - . superconductors (materials)
    - . . high temperature superconductors
    - . . . **BSCCO superconductors**
  - RT bismuth oxides
    - calcium oxides
    - copper oxides
- strontium oxides
- superconducting films
- BSX**
- GS explosives
    - . **BSX**
  - RT nitromethane
- bubble chambers**
- DEF Devices used for the detection and study of elementary particles and nuclear reactions. Charged particles from an accelerator are introduced into a superheated liquid, each forming a trail of bubbles along its path.
- GS ionization chambers
    - . **bubble chambers**
  - RT ∞ chambers
    - cloud chambers
    - elementary particles
    - particle trajectories
    - radiation counters
    - spark chambers
- bubble memory devices**
- GS computer components
    - . computer storage devices
    - . . **bubble memory devices**
  - magnetic storage
    - . **bubble memory devices**
  - RT binary data
    - core storage
    - data processing
    - data recorders
    - data recording
    - data storage
    - magnetic cores
    - magnetic domains
    - magnetic recording
    - magnetic switching
- bubble technique**
- GS technologies
    - . **bubble technique**
  - RT data recorders
    - electronic equipment
    - flight instruments
  - ∞ instruments
    - magnetic domains
    - onboard equipment
    - recording instruments
    - semiconductor devices
    - solid state devices
    - spacecraft instruments
- bubbles**
- DEF Internal voids or trapped globules of air or other gas.
- RT aeration
    - cavitation flow
    - Coanda effect
    - effervescence
    - foams
    - metal foams
    - wakes
- Buccaneer aircraft**
- UF *B–103 aircraft*
    - Blackburn B–103 aircraft*
  - GS attack aircraft
    - . **Buccaneer aircraft**
  - Hawker Siddeley aircraft
    - . **Buccaneer aircraft**
  - jet aircraft
    - . **Buccaneer aircraft**
  - monoplanes
    - . **Buccaneer aircraft**
  - RT ∞ aircraft
    - Harrier aircraft
- bucket brigade devices**
- GS electronic equipment
    - . solid state devices
    - . . semiconductor devices
    - . . . charge transfer devices
    - . . . . **bucket brigade devices**
  - RT charge coupled devices
    - semiconductors (materials)
- ∞ **buckets**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
  - RT boxes (containers)
    - ∞ capsules
    - drums (containers)
    - trays
    - turbomachine blades
- buckeye aircraft*
- USE **T–2 aircraft**
- buckling**
- DEF An unstable state of equilibrium of a thin-walled body stemming from compressive stresses in walls. The lateral deflection of a thin-walled body resulting from such instability.
- GS **buckling**
    - . creep buckling
    - . elastic buckling
    - . Euler buckling
    - . thermal buckling
  - RT bending
    - collapse
    - compression loads
    - deformation
    - distortion
    - Donnell equations
    - failure
    - failure modes
    - flange wrinkling
    - heaving
  - ∞ ridges
    - shell stability
    - stresses
    - structural failure
    - structural strain
    - temperature inversions
    - torsion
    - twisting
    - warpage
    - wrinkling
- buckminsterfullerene**
- (added August 1991)
- DEF A form of solid carbon consisting of a somewhat disordered hexagonal close packing of soccer-ball-shaped C60 molecules. The molecules are extremely hard pseudospherical molecules bonded by weak Van der Waals forces.
- GS fullerenes
    - . **buckminsterfullerene**
  - RT carbon
    - graphite
    - molecules
    - polyatomic molecules
    - polyhedrons
- budgeting**
- RT accounting
    - allocations
    - appropriations
  - ∞ budgets
    - cost analysis
    - cost effectiveness
    - cost estimates
    - economic factors
    - estimating



## buffer storage

financial management  
forecasting  
grants  
income  
mission planning  
planning  
procurement management  
project planning  
revenue

### ∞ budgets

SN (USE OF A MORE SPECIFIC TERM IS  
RECOMMENDED—CONSULT THE TERMS  
LISTED BELOW)  
RT budgeting  
Earth radiation budget  
energy budgets  
engineering management  
federal budgets  
foreign policy  
heat budget  
procurement management  
research management

### *Buffalo aircraft*

USE **DHC 5 aircraft**

### buffer storage

DEF In computer operations, storage used to  
compensate for a difference in rate of flow or time  
of occurrence when transferring information from  
one device to another.

GS computer components  
. computer storage devices  
. . **buffer storage**

RT ∞ buffers  
core storage  
data storage  
∞ storage

### ∞ buffers

SN (USE OF A MORE SPECIFIC TERM IS  
RECOMMENDED—CONSULT THE TERMS  
LISTED BELOW)  
RT buffer storage  
buffers (chemistry)

### buffers (chemistry)

RT bases (chemical)  
∞ buffers  
chemical equilibrium  
neutralizers  
pH

### buffeting

DEF The beating of an aerodynamic structure  
or surfaces by unsteady flow, gusts, etc.; the  
irregular shaking or oscillation of a vehicle  
component owing to turbulent air or separated  
flow.

RT aerodynamic stability  
aircraft stability  
boundary layer control  
compressibility effects  
flight characteristics  
flutter  
oscillating flow  
shaking  
spacecraft motion  
spacecraft stability  
Strouhal number  
turbulence effects  
vortex avoidance

### *building materials*

USE **construction materials**

### *building structures*

USE **buildings**

### buildings

DEF Structures erected and framed of  
component structural members designed for the  
housing, shelter or support of persons, animals, or  
property. Used for building structures.

UF *building structures*  
RT architecture  
basements  
ceilings (architecture)  
chimneys  
construction  
construction industry  
floors  
greenhouses  
hangars  
indoor air pollution  
inflatable structures  
missile silos  
museums  
roofs  
shelters  
solar houses  
stairways  
Starsite program  
walls

### bulbs

RT luminaires  
plant roots  
pressure vessels  
syringes

### Bulgaria

GS nations  
. **Bulgaria**  
RT Black Sea  
Europe

### bulging

GS metal working  
. **bulging**  
RT deep drawing  
dimpling  
explosive forming  
forging  
hot working  
magnetic forming  
metal drawing  
stretch forming

### bulk acoustic wave devices

DEF Acoustooptic devices utilizing bulk sound  
waves at megahertz frequencies in thin film  
transducers. Used for B–A–W devices.

UF *B–A–W devices*  
RT ∞ devices  
surface acoustic wave devices  
transducers

### bulk modulus

DEF The reciprocal of the coefficient of  
compressibility.

GS mechanical properties  
. **bulk modulus**  
RT compressibility  
density (mass/volume)

### bulkheads

DEF Steep or vertical structures supporting  
natural or artificial embankments.

GS walls  
. **bulkheads**  
RT ∞ barriers  
end plates  
hulls (structures)  
partitions (structures)  
reinforcement (structures)  
thick walls

thin walls

### Bullpup missiles

GS missiles  
. air to surface missiles  
. . **Bullpup missiles**  
RT LR–62–RM–2 engine

### Bumblebee project

GS missiles  
. **Bumblebee project**  
programs  
. projects  
. . **Bumblebee project**  
RT Talos missile  
tartar missile  
terrier missile  
Typhon weapon system

### bumpers

RT cushions  
meteoroid protection  
meteoroids  
protectors

### bumpy toruses

DEF The shapes (doughnuts) of certain  
plasmas.

RT fusion reactors  
plasma control  
plasma heating  
tokamak devices  
toroidal plasmas

### Buna (trademark)

GS elastomers  
. rubber  
. . synthetic rubbers  
. . . **Buna (trademark)**  
RT butadiene  
styrenes

### bunching

GS **bunching**  
. electron bunching  
RT queueing theory  
space charge  
velocity modulation

### bundle drawing

RT ∞ drawing  
metal drawing

### bundles

RT ∞ containers  
packages  
umbilical connectors  
wiring

### bunkers (fuel)

GS tanks (containers)  
. **bunkers (fuel)**  
RT fuel systems

### buoyancy

RT acoustic levitation  
aerostatics  
ballast (mass)  
density (mass/volume)  
floating  
gas density  
levitation  
mechanical properties  
neutral buoyancy simulation  
∞ physical properties  
porosity  
Rayleigh number  
voids

**buoys**

- RT beacons
- compasses
- floats
- ∞ markers
- navigation aids
- ocean data acquisitions systems

**Buran space shuttle**  
*(added August 1989)*

- GS manned spacecraft
  - . space shuttles
  - . . **Buran space shuttle**
- reentry vehicles
- . recoverable spacecraft
- . . reusable spacecraft
- . . . space shuttles
- . . . . **Buran space shuttle**
- soft landing spacecraft
- . **Buran space shuttle**
- Soviet spacecraft
- . **Buran space shuttle**
- RT aerospace planes
- U.S.S.R. space program

**bureaus (organizations)**

- GS institutions
  - . **bureaus (organizations)**
- organizations
- . federations
- . . **bureaus (organizations)**
- RT programs
- projects
- teams
- university program

**burettes**

- GS measuring instruments
  - . **burettes**
- RT glassware
- pipettes
- ∞ tubes

**Burger equation**

- GS analysis (mathematics)
  - . real variables
  - . . differential equations
  - . . . partial differential equations
  - . . . . **Burger equation**
- RT continuum mechanics
- ∞ equations
- Navier–Stokes equation
- shock wave propagation

**Burkina**

- UF *Upper Volta*
- GS nations
  - . **Burkina**
- RT Africa

**Burma**

- GS nations
  - . **Burma**
- RT Asia

**burn-in**

- RT failure
- failure analysis
- integrated circuits
- quality control

**burners**

- RT afterburning
- chemical reactors
- combustion chambers
- diffusion welding
- fuel injection
- furnaces
- incinerators

waste energy utilization

**Burnett equations***(added March 1996)*

- SN (These equations are frequently associated with models of hypersonic flow and shock waves.)
- GS equations of motion
  - . kinetic equations
  - . . hydrodynamic equations
  - . . . **Burnett equations**
- flow equations
- . **Burnett equations**
- RT Boltzmann transport equation
- Chapman–Enskog theory
- computational fluid dynamics
- hypersonic flow
- shock waves

*burning*USE **combustion***burning process*USE **combustion****burning rate**

- DEF The velocity at which a solid propellant in a rocket is consumed. The symbol is  $r$ .
- GS rates (per time)
  - . **burning rate**
- RT burnout
- combustion
- combustion control
- combustion efficiency
- combustion stability
- explosives
- flame propagation
- flammability
- fuel consumption
- fuel–air ratio
- fuels
- pressure dependence
- propellant consumption
- propellant grains
- propellants
- smoldering
- solid propellant combustion
- solid propellant rocket engines
- solid rocket propellants
- velocity coupling

**burning time**

- UF *firing time*
- GS time
  - . **burning time**
- RT combustion
- combustion efficiency
- firing (igniting)
- flight optimization
- flight time
- rocket engines
- rocket firing
- testing time
- thrust
- windows (intervals)

**burnout**

- SN (LIMITED TO TERMINATION OF COMBUSTION IN A ROCKET ENGINE BECAUSE OF EXHAUSTION OF THE PROPELLANT)
- DEF The termination of combustion in a rocket engine because of exhaustion of the propellant.
- RT booster rocket engines
- burning rate
- combustion
- ∞ cut-off
- erosive burning

 extinguishing  
 solid propellant rocket engines  
 thrust termination
**burns (injuries)**

- GS injuries
  - . **burns (injuries)**
- RT crash injuries
- fires
- laser damage
- lesions
- radiation injuries

**burnthrough (failure)**

- GS failure
  - . **burnthrough (failure)**
- RT ablation
- damage
- melting
- perforating

**burst tests**

- GS destructive tests
  - . **burst tests**
- RT containment
- failure analysis
- fracture mechanics
- fracture strength
- ∞ materials tests
- pressure vessels

**bursts**

- GS **bursts**
  - . gamma ray bursts
  - . radio bursts
  - . . solar radio bursts
  - . . . type 2 bursts
  - . . . type 3 bursts
  - . . . type 4 bursts
  - . . . type 5 bursts
- RT ∞ disturbances
- emission
- explosions
- fragmentation
- implosions
- rupturing

*bursts (communication)*USE **packets (communication)****Burundi**

- UF *Ruanda–Urundi*
- GS nations
  - . **Burundi**
- RT Africa
- Rwanda

**bus conductors**

- GS conductors
  - . **bus conductors**
- RT electric wire
- flat conductors
- power lines
- ∞ power transmission

**bushings**

- RT bearings
- inserts
- linings
- shafts (machine elements)
- spacers

*business management*USE **industrial management****butadiene**

- UF *vinyl ethylene*
- GS organic compounds
  - . hydrocarbons

## butanes

- . . aliphatic hydrocarbons
- . . . dienes
- . . . . **butadiene**
- RT Buna (trademark)
- hydrocarbon fuels
- polybutadiene
- inlet nozzles
- intake systems
- nose inlets
- side inlets
- supersonic inlets

## butanes

- UF *isobutane*
- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . alkanes
- . . . . **butanes**
- RT petroleum products

## butenes

- UF *butylene*
- isobutylene*
- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . alkenes
- . . . . **butenes**

## butt joints

- GS joints (junctions)
- . **butt joints**
- RT lap joints
- metal joints
- riveted joints
- soldered joints
- welded joints

## butterfly valves

- GS valves
- . **butterfly valves**
- . . dampers (valves)

## buttes

- GS landforms
- . terraces (landforms)
- . . plateaus
- . . . mesas
- . . . . **buttes**

## ∞ buttons

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT manual control

## butylene

- USE **butenes**

## butylene oxides

- USE **tetrahydrofuran**

## butyric acid

- GS acids
- . **butyric acid**
- RT fermentation

## by-products

- RT materials recovery
- products
- reaction products
- wastes

## bypass ratio

- DEF Ratio of the secondary to the primary inlet airflows for a turbofan engine.
- GS ratios
- . **bypass ratio**
- RT air intakes
- engine inlets
- flow geometry
- hypersonic inlets
- inlet airframe configurations
- inlet flow